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HOME CINEMA

SAGEM

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HACKING THE APPLE TV CLASSIC RESTORATION NEW PIONEER AVRs

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NEW LEGENDS

REVIEWED

Sony 200HZ LCD TV

Why the
Z5500 puts
the Bravia
brand back
on top

WIN!
A CUSTOM
VELODYNE
SUBWOOFER

NEW TECH

LED DLP

Is this the
future of AV
projection?

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6-PAGE TEST

Denon AVR-4310

Our ultimate verdict on the
amazing new AV receiver

Plus 300: THE COMPLETE EXPERIENCE → BSG BOX SET
BEST OF BRUCE WILLIS → WATCHMEN US IMPORT RATED

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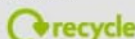
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Blu-ray is bringing new life to old classics



WELCOME

I'm constantly in awe of the work being done by the AV wizards who restore movie classics. Give them the most beaten and tired negatives and they can make them look as though they were made yesterday.



As incredible as it may seem, old movies released today on Blu-ray now look even better than when they first appeared theatrically. To learn more, HCC quizzed ITV film archivist Fiona Maxwell about the fascinating hi-def restoration of the 1948 Powell and Pressburger classic *The Red Shoes*, and other projects.

We also take a look into the near future, **with an exclusive interview with Panasonic's Chief Technology Officer** about his dramatic plans for 3D TV and Blu-ray.

And if that's not exciting enough, we offer an in-depth review of Denon's latest high-end receiver, the AVR-4310, and compare a quartet of stunningly-equipped next-generation PVRs.

Enjoy the show!

Steve May

Editor

TEAM HCC

Steve May:

The UK's most experienced AV Editor with 20+ years as a CE journo on his clock



Anton van Beek:

News Ed Anton began his pro-videophile career over a decade ago



Mark Craven:

HCC's Production Editor is not only a movie obsessive, he can read shorthand



Rik Henderson:

HCC's Dep Ed is an AV and videogames nut – and former TV presenter



Chris Jenkins:

Our ISF-calibrated Tech Labs manager is the former Editor of *Total DVD* mag



John Rook:

Art Editor John first worked on HCC back in 1999, when TVs were made of wood



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A CUSTOM
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Emtec P800 HDD Movie Cube
Sagem DTR67500T
Wyplay Wyplayer

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Equipment reviewed in Home Cinema Choice is measured and quantified by Future Tech Labs, which for more than 15 years has set the standard for independent AV test & measurement. The findings of the Tech Labs are used to underpin the subjective opinions of our Reviews team, ensuring that you receive the best-possible advice when it comes to planning your next purchase



CO-STARRING

This issue's team of expert writers are the best qualified in the business

Adam Rayner:

The UK's foremost expert in extreme audio writes about bass, hi-fi and cartoons



Richard Stevenson:

Industry veteran and former Editor of UK CE trade journal ERT



Danny Philips:

Former Editor of What Video & High-Definition TV and dedicated AV boffin



Jim Hill:

Apple fanatic Hill is the former editor of T3 Home and a What Hi-Fi escapee



Jon Thompson:

Post-production specialist whose film credits include Casino Royale and Kill Bill



Sam Kieldsen:

Ex PC journalist and T3's leading technology reporter, Sam is a computer whizz kid



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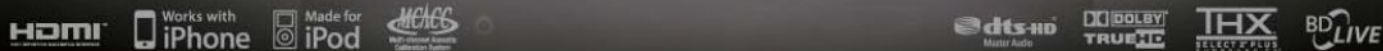


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7-CHANNEL
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BDP-LX52
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Pioneer

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BULLETIN

→ **News highlights** **PIONEER SPIRIT** Latest AVRs aim to smooth out HDMI jitter
GO FETCH Enjoy IPTV without a PC **WATCH OUT DOLBY** There's a new audio algorithm in town
SAMSUNG TALKS TOUGH Samsung attacks rivals for misleading consumers **TERMINATOR:**
SALVATION Sci-fi franchise rebooted on Blu-ray **DEMO'D** One-stop guide to the best bits of *Bolt*



Blu-ray gets clever

LG BD390 → www.lge.co.uk

LG's BD390 has aspirations to be much more than just a hi-def disc-spinner – in addition to top-end BD features (including Profile 2.0 functionality and 7.1 analogue audio outputs), the deck is been designed to work as an AV hub for your front room. Advanced media features include DLNA certification for content streaming, integrated wi-fi, 1GB of internal memory, 'one-click' access to YouTube and compatibility with MKV and DivX HD file formats. Check back next month for our in-depth review.

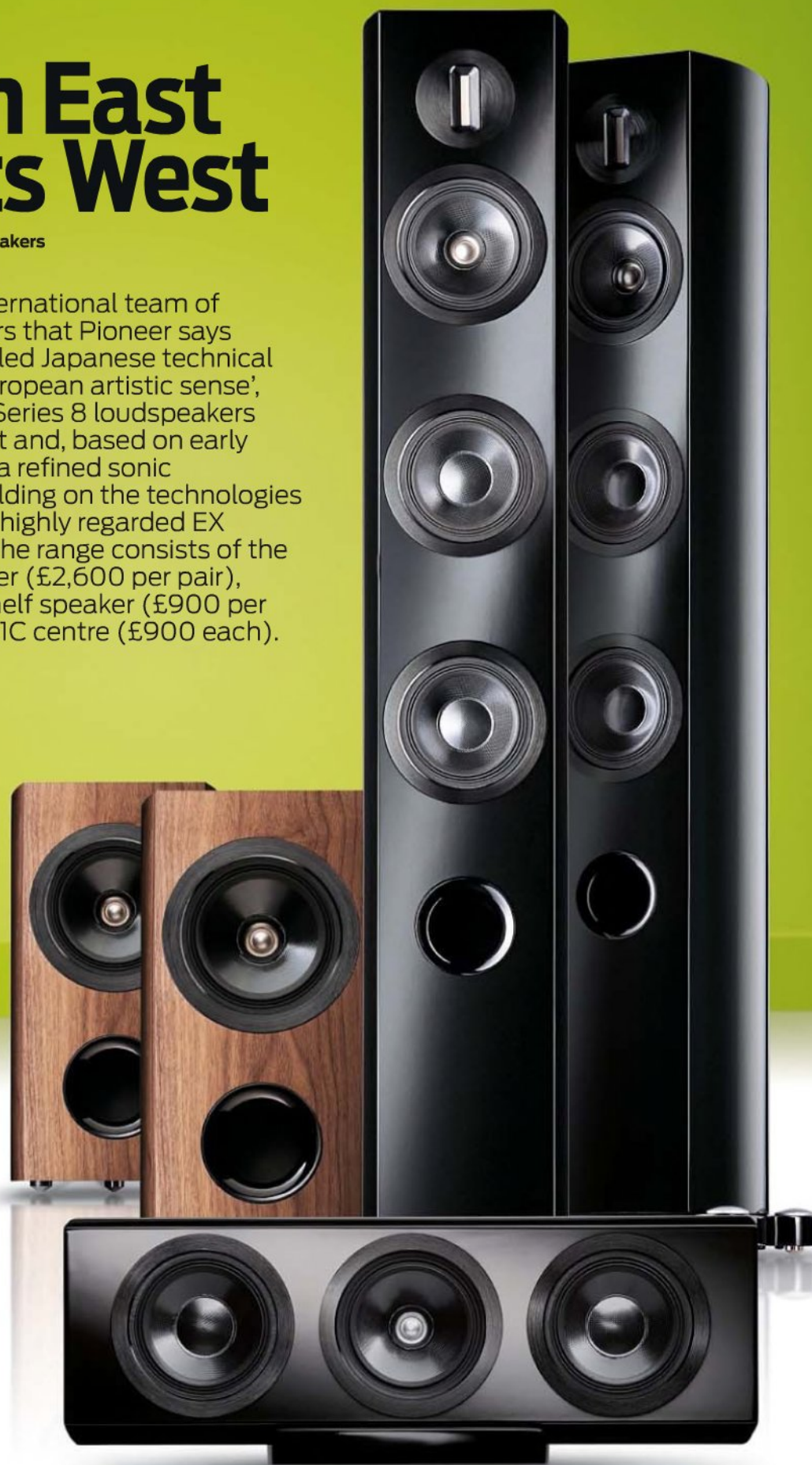
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When East meets West

Pioneer Series 8 loudspeakers
www.pioneer.co.uk

Created by an international team of acoustic engineers that Pioneer says 'unites highly-skilled Japanese technical experts with a European artistic sense', the brand's new Series 8 loudspeakers both look the part and, based on early previews, deliver a refined sonic performance. Building on the technologies used in Pioneer's highly regarded EX Series speakers, the range consists of the S-81K floorstander (£2,600 per pair), S-81B-LR bookshelf speaker (£900 per pair) and the S-81C centre (£900 each).



Partner with...

Pioneer BDP-LX52
High-end Blu-ray player
£550 approx



To complement its new speakers, Pioneer has released a matching high-end BD player. The Profile 2.0 LX52 decodes and bitstreams out HD audio, supports 48bit Deep Colour and features the company's Precision Quartz Lock System to remove jitter when connected to a compatible AV receiver.
www.pioneer.co.uk

IPTV made easy



IP Vision's FetchTV will interest those who want access to iPlayer and other similar 'net-based catch-up services without the hassle of a PC. Priced around £220, it plugs straight into your TV and broadband network and gives free access to iPlayer and selected VOD services from the likes of Channel Four, Sky Sports News and CNN. In addition, the box can also be used to access pay-per-view content and films from Paramount Pictures, National Geographic and Cartoon Network. FetchTV also boasts twin Freeview tuners and a 160GB HDD.

Q Acoustics sounds off



Described semi-seriously at its launch as 'the most important invention since fire or the wheel', the £300 Q Acoustics Q-TV2 is designed as a solution to the problem of inadequate sound systems on modern flat-screen TVs. It consists of a 100W amplifier, slimline ported subwoofer, and two satellite speakers using BMR (Balanced Mode Radiator) drivers. It connects to the back of a 30-42in TV using the VESA sockets, and amplifies the sound of the TV or any connected source.

Little big man



The latest addition to Monitor Audio's flagship Platinum range is the PL200 loudspeaker – a compact version of the PL300, taking up roughly a third of the volume of its predecessor. Priced around £4,750 a pair, the PL200 uses a re-scaled 6.5in version of the Platinum 8in bass driver, yet its engineers claim to have 'preserved all the sonic virtues of the larger speaker.' Cabinet finishes include lacquered Santos Rosewood and Ebony natural wood veneers – even the front baffle is upholstered in high-quality leather.

Jitter-free launch for amps

Pioneer extends timing technology to multichannel receivers

Pioneer has taken the wraps off two exciting AV receivers due for release in the UK this Autumn – and *HCC* had an exclusive run through with the new models at London's Air Recording Studios, where the duo have been sound-tuned.

The SC-LX82 and SC-LX72 are third-gen digital amps from the brand, and the first to introduce a multichannel version of its proprietary Precision Quartz Lock System (PQLS) anti-jitter technology. PQLS aims to reduce distortion caused by timing errors that can occur using HDMI by allowing an AV receiver to control a Blu-ray player's clock frequency. The first version of PQLS worked only with two-channel PCM and was designed to improve the fidelity of stereo CDs. To function, it required both a PQLS-compatible BD player and receiver. The updated version works on multichannel PCM sources, and again needs matched components.

HCC experienced both stereo and multichannel PQLS being auditioned, the former with a Dire Straits album recorded in 1985, and the latter with *Concert for Diana* on Blu-ray. In both cases, the benefits of the processing were similar and striking. With PQLS engaged, the soundstage produced by the receiver widened and image placement improved. The clarity of the older Dire Straits recording was phenomenal, while with the multichannel mix, dimensional effects (such as audience applause and a circling helicopter) appeared more defined and enveloping.

The perceived benefits were not just confined to



Pioneer's Yoshitaka Yaeguchi gave *HCC* an exclusive demo of the brand's new AVRs

objective opinion. With one of the new receiver's hooked up to a Tektronix TDS7404

oscilloscope, a histogram depicting noise improved dramatically with PQLS engaged.

Spokesman Yoshitaka Yaeguchi told *HCC* that the multichannel implementation has been made with music in mind: 'There are more music releases coming to BD and the benefits of the system are clear. It's not so evident on movie soundtracks.'

Indeed, Pioneer confirmed that PQLS processing only works with LPCM, and not any bitstream output from the player. 'If the DAC in your receiver is of higher quality than the one in your Blu-ray player, it still makes sense to bitstream out DTS HD MA or Dolby TrueHD and let the receiver do the decoding,' says Yaeguchi.

Boost for talkies

Pioneer's new Optimum Mode also makes an appearance on the AVRs. Provided for those unable or unwilling to listen to movies at 0db reference level, it dynamically enhances dialogue

and surround effects, as well as applying a bass boost.



Smooth: The LX72 features PQLS anti-jitter tech

Playlist...

Team *HCC* reveals its Playback picks of the last month

1 Dollhouse (SciFi HD)

Joss Whedon's slow-burn fantasy begins to pay-off in spades towards the end of its first season. The twists surprise and Eliza Dushku delivers. Definitely worth sticking with. *Steve May*

2 Bronson (Region B BD)



This low-budget biopic of the UK's most violent criminal is as masterful as it is unpleasant. Tom Hardy's performance is a work of genius. *Rik Henderson*

3 WRC 2009 (Dave)



F1? Pah – the World Rally Championship is real motor sport. Nutty drivers, nutty cars and nutty spectators. *Mark Craven*

4 Friday the 13th Parts 4-6 (R1 DVD)



The 'Tommy Jarvis trilogy' returns to DVD accompanied by brand new commentaries, featurettes and deleted scenes. Woo-hoo! *Anton van Beek*

5 S. Darko (R2 DVD)



Not in the same league as her big brother and disappointing bunny content. Leave it to the bargain bin. *John Rook*

Demo'd!

The audio-visual highlights of... *Bolt* on Blu-ray

The chase is on



06.31: *Bolt* isn't a typical Disney 'toon. The four-minute chase sequence in Chapter Two serves up a cavalcade of motorbikes, 'copters and explosions that showcase the excellent directional FX and pounding bass of the disc's DTS-HD 5.1 mix.

Hair of the dog



14.37: This close-up of Bolt's head highlights the incredible level of fine detailing inherent in the AVC 1080p encode. The rendering of each individual hair is nothing short of breathtaking.

Jump!



46.44: The sequence where Bolt and Chums make a leap from a bridge to a passing train provides a wonderful mix of fast motion, fine textures, robust colours and dynamic audio that will push every element of your cinema system to their limits.

Burn baby, burn



81.11: The film's incendiary climax doesn't just get your pulse racing and tug on the old heartstrings, it also proves to be a fabulous test for how well your screen deals with deep inky black levels and rich, red and yellow colour saturation.

Sontia: the future of sound?

Revolutionary algorithm could bring new realism to TV speakers

British company Sontia believes it has developed audio processing technology which could breathe new life into TV speakers, and after a demo of its 'psycho-acoustic organic convolution engine' HCC concludes that it may be onto something.

While there are already several systems of this kind in the market, such as SRS TruSurround and Dolby Virtual Speaker, the Sontia iteration is not only designed to enhance bass, create immersive effects and virtual surround, but also to carry out other processing effects without creating the fatiguing artefacts.

It's based on new HRTF (Head Related Transfer Function) studies. In normal English, this means that it uses an artificial head to develop processing algorithms which emulate the effect of the human body on the perception of sound.

Other companies base their sound enhancement processing on HRTF algorithms developed in the 1970s by the Massachusetts Institute of Technology (MIT), but Sontia has made new 384kHz 42-bit measurements with real human subjects, taking into account bone structure and other factors.

The result is a sound processing algorithm that could be adapted to many different types of product. It could make the thin speakers in flat

TVs sound better, get surround effects out of stereo speakers, make budget speakers sound expensive, or enhance expensive speakers. Manufacturers could then license the software and incorporate it into digital signal processing (DSP) chips.



Sontia's Chris Vernon has been heading up research for the company since 2004

HCC listened to demo sequences from the film *Hero* using a TV with small speakers, a set of affordable speakers, and a decent surround sound array. Using the Sontia HD Deep Harmonic Extension system on the small TV and the budget speakers delivered much improved bass and a better spatial sense.

On good speakers, enhancement effects normally reveal distortions – here the Sontia algorithms actually lower the output volume to work the speakers less hard, so the enhancements can be more effective. Importantly, the processing seemed to work well when sitting 'off-axis'.

However, it's too early to say when we might see products using the technology. 'The intention is to build Sontia as a brand,' explained chairman Mark Bernstein. 'We're not proposing that a TV manufacturer would dump Dolby, but it would have a little Sontia sticker as well'.

And while the existing system is a post-processing technology, Sontia's CEO Chris Vernon sees no reason why it could not also be used in pre-production, perhaps to create 3D sound

to go with 3D movies.

'The more control we have of the content, the more we can do with it,' he explained.

Heroic algorithms: Sontia's sound processing aims to enhance bass and widen soundfields



Blu moon rising



Fans of John Landis' 1980's horror classic *An American Werewolf in London* will be howling with

delight at the news that the film is coming to Blu-ray in the UK on September 28.

Priced at around £20, the new Blu-ray edition features a remastered 1080p transfer, DTS-HD MA 5.1 audio (sadly, there's no original mono track) and plenty of extras including the commentary, featurettes, storyboards and interviews from the old DVD release, plus a new feature-length *Making of...* documentary entitled *Beware the Moon*.

Star Wars HD



Forget *The Lord of the Rings*, the real Holy Grail for home cinema fans is the arrival of the *Star*

Wars saga in hi-def. And while there's still no concrete news, Steve Sansweet, 'Head of Fan Relations' for Lucasfilm spoke about a six-film Blu-ray boxset recently: 'We've been thinking about this for a while, we know what kind of assets we want to use, we've done some work in cleaning things up, so it's really a matter of making that decision of when's the best time'. We reckon its release is likely to tie in with the debut of the *Star Wars* TV series currently in the pre-production.

The horror, the horror...




Art house favourite Artificial Eye will release Lars Von Trier's horrorfest *Antichrist* to DVD

and Blu-ray in the UK on November 23. No word yet on extra features for either, but we have been told that the film will be uncut.

Antichrist made a name for itself at the Cannes Film Festival earlier this year, thanks to unsimulated sex scenes and graphic violence (although that didn't stop actress Charlotte Gainsbourg winning the Best Actress award at the festival). Expect oodles of controversy upon its release.

Robot wars

Terminator Salvation → Sony Pictures
→ R2 DVD & Region B Blu-ray



The fight for the future comes home on November 23, when the latest and loudest entry in the *Terminator* franchise hits UK DVD and BD. In addition to the film itself, the Blu-ray promises a *Maximum Movie Mode* with director McG analysing the film's key scenes, plus numerous featurettes, a look at the making of the Moto-Terminator and loads of BD-Live goodies. As is becoming common, it seems that all extras have been terminated on the single-disc DVD.

OCTOBER 2009 HOME CINEMA CHOICE

Pick'n'mix

Ex footballer Martin Keown picks his five fave films and TV shows



1 The Wrestler

This film was really hyped up but it exceeded my expectations. Mickey Rourke is brilliant in it.

2 Gran Torino

I'm a big Clint Eastwood fan, so this was definitely top of my must see list.

3 Seven Pounds

I'm first in line for any Will Smith film. It's different to his other stuff but a great watch.

4 Doctor Who

It's one of those iconic programmes that we've all grown up with. I'm looking forward to seeing what the new Doctor is like.

5 Shameless

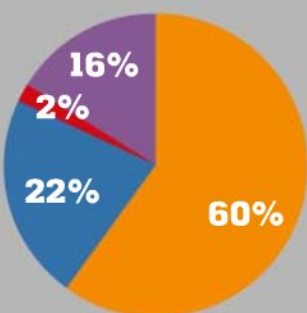
This has been one of the best TV shows around

Martin Keown is supporting the Communicating for Success TV channel. This is BT Vision's first community channel and underpins a groundbreaking partnership between BT and the Football Foundation designed to tackle digital exclusion. For more information visit www.footballfoundation.org.uk/cfs

We asked...

What feature will tempt you to upgrade your amp? You replied...

- Dolby TrueHD/DTS-HD Master Audio recording
- Network streaming and internet radio
- iPod compatibility
- Multiple HDMI inputs and a whizzy GUI



Results from www.homecinemachoice.com
Go online for more polling action

Samsung hits out at rivals

Koreans say consumers are being misled by manufacturers

Samsung claims that its rivals are making misleading claims about 200Hz and LED TV technologies. At an exclusive seminar in its European headquarters in Chertsey, Simon Lee, one of Samsung's senior engineers, explained why he thought consumers were being misled.

The argument revolves around the double-speed 200Hz screen-scanning technology used to reduce image blur. Lee claims Samsung's panels (like Sony's) use genuine 200Hz functionality, while rivals use 100Hz scanning plus a backlight blinking method to achieve similar effects.

'Samsung aims to be a "first mover", not a follower in technology,' said Lee. 'We have been developing our own unique processor technology since 2005, and now have 500 engineers working on our System On Chip scaler/processor. Other manufacturers who don't have this technology might call their panels 200Hz, but they use the backlight blinking system which causes flickering artefacts, and with low backlight levels isn't effective. Customers can't be expected to figure this out, so we think the claims are misleading.'

It's clear that Samsung particularly wants to establish its 200Hz technology because it has implications for the development of next-gen displays. Its proposed 'half-resolution' 3D system uses two 720-line resolution images, with a 200Hz refresh rate, so current Full HD sets will work with it. BSkyB wants to use a similar system, but Panasonic plans to use two



Simon Lee **thinks some companies blur the picture on 200Hz technology**

full-resolution (1080 line) images, which would need new displays. So if Samsung can establish itself as a supplier

of true 200Hz technology, it paves the way for an affordable 3D system. 'We need the technology to prepare for the next generation of display such as 3D,' admits Lee.

Samsung has also moved away from RGB LED technology, back to white LED. 'With RGB LED it's difficult to match fleshtones, but the colour spectrum of white LED is closer to industry standards,' says Lee. He also wanted to dispel misconceptions about Samsung's edge-lit LED screens. 'Conventional LCD screens with a full backlight array have an optical diffuser sheet to guarantee uniformity of brightness,' he explained. 'But having more LEDs doesn't make the picture better – you still get a haloing effect around each LED, even if you use local dimming. Samsung's

slim LCD screens use LED edge-lighting, but this doesn't affect brightness uniformity because we use a graduated height reflector. The diffuser sheet can then be thinner, which means an increase of 20 per cent in brightness. I'm not saying that edge LED is better than local dimming, but it has its advantages.'



Samsung wants to lead on tech, rather than follow

KEF debuts new KHT egg range



KEF is looking to broaden the appeal of its KHT Series with the release of the KHT2005.3 K1 5.1

home cinema speaker package. Priced at £700, this update to the KHT2005.3 bundle still includes four HTS2001.1 egg-shaped satellites and a HTC2001.3 centre speaker (all with Uni-Q driver array, metal dome tweeters and cast aluminium enclosures), but drops the 200W KEF KUBE-2 subwoofer in favour of the KUBE-1. Promising 'performance that belies its size', the compact KUBE-1 features a 150W on-board amplifier, 8in long-throw bass driver and an 8in ABR (Active Bass Reflex).

Budget Blu-ray



Philips has decided to target the budget Blu-ray buyer in what some might see as an effort to boost its

profile in the AV market. A snip at just £170, the super-slim BDP3000 ticks many of the boxes buyers look for including support for 1080p24, onboard Dolby TrueHD 7.1 audio decoding, x.v. Colour technology and BD-Live functionality. HDMI, composite, component, coaxial and analogue phono outputs are included, alongside USB and Ethernet connections. The deck also features DivX Ultra capability for enhanced playback of DivX files, and the ability to handle MP3s and JPEGs.

Lubricate your audio



In the world of high-performance audio, it's vital to keep the integrity of the signal by using

the best possible connections. But what about the oxidation and contaminants that can affect cables? Well, the pro-grade audio accessory boffins at Blue Horizon have come up with Clean-IT, a fast-acting deoxidising solution with a unique formulation that promises to 'clean, condition, lubricate, preserve and improve the conductivity of all metal connectors and contacts'. Blue Horizon Clean-IT is available now in 10ml bottles (sufficient for 100 applications), priced around £18.

This month's top ten news stories in handy, bite-sized chunks...

1 Sat-caster preps 3D TV

Sky will launch a 3D channel for Sky+ subscribers in 2010. 'The service will be broadcast across Sky's existing HD infrastructure and be available via the current generation of Sky+HD set-top boxes,' the company stated. 'To watch 3D, customers will also require a new 3D Ready TV, which are expected to be on sale in the UK next year.' Here's hoping Sky comes up with better content than the 3D *Gladiators* clip we saw at an earlier demo.



6 Time for a new format

Forget DVD and Blu-ray, it seems Hollywood studios are eyeing up other formats to use in distributing their films. In the past month, Disney has agreed a deal that will see its films distributed on SD cards in Japan, while Sonic Solution and Wildvine have created a partnership aimed at releasing films on USB drives, the first of which are expected to arrive in the US this November.

2 DTO adds DivX appeal

DivX has announced deals with three European download-to-own stores, letting them sell premium Hollywood content in the DivX format. DTO sites FilmOn.com (UK), ERG (Belgium, The Netherlands), and Play4Film.com (film portal in Italy) will offer DivX movies from Hollywood studios to consumers throughout Europe.

7 One small step

Lowry Digital, best known for its spectacular cinema-restoration work that brought new life to over 400 classic movies (including the original *Star Wars* trilogy and the Bond movies on DVD), has begun a three-month project to clean up the iconic Moon landing video sequences. Could this one small step for the technicians at Lowry Digital be a giant leap in the public's appreciation of film-restoration tech?

3 Studios favour Blu

Warner said that *Watchmen* on Blu-ray made up 36 per cent of its first week sales, so it's no surprise some studios favour hi-def over DVD. Paramount has said the comedy *Dance Movie* will sell on Blu-ray on September 8, with DVD rental on the same day. Says Paramount exec VP sales Ken Williams, 'We believe that a DVD rental window will increase revenue in that channel and that releasing a Blu-ray exclusively for sell-through will help drive adoption of the format.'

4 Joining Forces

Sony and Sharp have entered into a joint venture to make and sell bigscreen LCD panels and modules. The newly formed Sharp Display Products Corporation, based in Sakai City, Osaka, will open its doors for business in October. Sharp will own 66 per cent of SDP, and Sony 34 per cent. Sony's existing joint venture with Samsung should not be affected by the new deal.

5 Blu-ray recorders get bigger

Panasonic is to launch a Blu-ray recorder with a 2TB hard drive. The Diga-branded DMR-BW970 leads a fleet of six new recorders into the Japanese market, and is scheduled to debut in September. The deck's monster drive equates to 320 hours of MPEG-4 AVC/H.264 video recorded at 12.9Mbps. We doubt you could even find enough recordable HD content in the UK to fill half that space...



8 Golden Oldies

A 73-year-old Marconiphone TV is officially the UK's oldest working TV. It was unearthed in a competition launched by Digital UK, along with Iain Logie Baird, Curator of Television at the National Media Museum in Bradford and grandson of TV inventor, John Logie Baird. It sports a 12in screen and cost 60 Guineas.

9 Blu-ray bonanza

Despite the recession, shipments of Blu-ray players will jump 112 per cent this year according to the US Consumer Electronics Association. The organisation also forecasts growth in sales of flatpanel TVs and smartphones. Price points on budget BD players are widely expected to dip below \$100/£100 on both sides of the Atlantic before Christmas.

10 Project your snaps

Given the success of camera-phones, it's no surprise camera-makers are looking at other features to integrate. And Nikon's new Coolpix S1000pj certainly does that, as the £400 12.1 megapixel digital camera also has a built-in projector, with a resolution equivalent to VGA (640 x 480 pixels), letting users blow up their photos to 40ins. The pocket projector is now a step closer to reality.

Premiere

HCC's guide to what's happening in the world of TV and films...

Back to the Futurama



In the words of Professor Hubert J Farnsworth, 'Good news everyone!' Comedy Central has ordered 13 new episodes of the sci-fi 'toon *Futurama* and, despite rumours that Fox TV wanted to recast the voices with cheaper actors, all of the original members have now signed on!

Web of Horror

Danny DeVito has unveiled a new online project, thebloodfactory.com, which will offer a series of short horror films. DeVito claims that 'Most of the movies are moral tales of revenge, people getting their comeuppance, and some are just bare-faced provocative shockers.'

Going Batty

Ever since *The Dark Knight* cleaned up at the box office rumours about a new Batman film have abounded. The latest may be more reliable as it comes from Commissioner Gordon himself. Actor Gary Oldman recently said that the next will be released in 2011.

No 3D rings yet

Peter Jackson has said that he would like to convert *Lord of the Rings* to 3D for a cinema re-release, but that Warner Bros. is unwilling to finance it due to the lack of 3D screens in cinemas.

Where's Wolf?



There's bad news horror fans – Universal has bumped the release of *The Wolf Man* back from this November to February 2010! The film, starring Benicio Del Toro and Anthony Hopkins, has been delayed three times.

News x10



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POINT OF VIEW

Richard Stevenson has read the Digital Britain Report and reckons we should be taxed to pay for fibre-optic broadband

Lord Stephen Carter CBE is a bit of a dude. Chief author of the *Digital Britain* report, technology aficionado and home cinema fan, he completely redefines the stereotypical image of the members of our illustrious House of Lords. The *Digital Britain* report is an eye-opener; well researched, well observed and packed with quite exciting directions for the legislative framework of the future. Having met Lord Carter at a recent London conference, I can report that he wasn't wearing a tweed jacket or monocle and, as far as I am aware, he didn't shoot a single peasant in the making of the *Digital Britain* report.

To save you ploughing through the report's 245 pages, the best bit is Lord Carter's foreword. This compares Captain James Cook's near three-year journey to Australia with today's digital information society: every minute of every day, almost 500 billion Gigabytes of information are moved around the world, 2.6 billion people spend the minute on a mobile phone and over 20-hours of new content is posted on YouTube. Information, communication, and entertainment are on the up-and-up, and we need to create an ever higher-speed, higher-capacity digital Britain to keep at the forefront of this revolution. Can't argue with that.

The conference itself also revealed snippets of future-tech, like BBC's trial of Super High Vision (AKA 8K video) at 7680 x 4320 resolution. Apparently, trials were very successful, although only as long as you have a data-pipe capable of handling the required 650Mbps. As often lamented on this page, my broadband manages about 650Kbps on a good day.

And there's the rub. Lots of really happening digital technologies, many of them entertainment-based, require a very large, very robust pipe right to your front door. A lot of us don't have that and won't for the foreseeable future. In fact, most of the country is still using a twisted pair of copper cables, as specified and by a Mr A G Bell in 1876,

and the vast majority of that copper is over 50-years old. Much of it is corroded, crumbling, repaired, spliced and chewed by squirrels.

Yes, fibre-optic networks are already available in large cities, thanks to Virgin Media, and coffee bars will one-day offer Wi-Max-style wireless broadband with a free blueberry muffin. But it is the wider UK infrastructure that is the biggest issue – or rather financing it.

So how can we fund Lord Carter's vision of a successful digital Britain? Well, entertainment and IPTV are likely to be primary drivers of data-growth to the home, so there is scope there. A separate report this week said there would be 40m pay-IPTV subscribers worldwide by 2010; and with the success of free IPTV services, like the BBC's iPlayer, I would say that was a hopeless underestimate. I would also go so far to say that **I think the iPlayer, and all similar services, should incur a small pay-per-view 'tax'** from next year (ducks below desk to avoid thrown fruit).

If we all paid just a few pence per programme for the flexibility of watching it when we missed its broadcast slot, it wouldn't take long to raise some start-up cash for a UK-wide fibre-optic roll-out project. And don't even get me started on YouTube. Same tax applies, but at double rate for normal downloads (because you shouldn't waste your life watching dross), five-times for porn and ten for the growing rash of viral marketing videos.

So, my point of view is this. Stephen Carter needs to be made prime minister as soon as possible – he has our interests at heart. He could then appoint me as Lord Stevenson of Rye, responsible for the legislative development of digital Britain – and I would immediately raise income tax to fund fibre-optic-rollout to every home in the UK – starting with rural east Sussex ●

For more of Richard Stevenson's ramblings log on to www.homecinemachoice.com/points_of_view

Richard Stevenson is currently re-papering every wall in his house with pages from his cherished *Digital Britain* report



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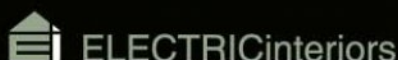
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DVD ADDICT

The Beek laments the sorry state of today's DVD extras – but thinks Blu-ray may be the saviour of bonus bits

Several issues ago (*HCC* #170) my fellow columnist Richard Stevenson began his crusade for the Order of Home Cinema Existentialism. For those of you who missed his rant, the basic gist went as follows – Blu-ray is being sold incorrectly, with all of the focus on the interactive special features and nobody talking about the hi-def AV quality. He even went as far as to suggest banning Blu-ray special features altogether, and highlighted how 'less-than-chuffed' I was with his idea.

Now, it's true that I'm a big fan of bonus material – that's why I tend to write the Extras sections of the larger disc reviews in our *Playback* section. However, I do have some sympathy with Ricardo's point-of-view, although in my opinion the problem lies with the poor quality of extra features being served up on most platters.

All too often, dedicated film fans with an interest in learning about the making of a movie cue up an interview or featurette only to be greeted by off-cuts from the Electronic Press Kit, where cast members sit around, saying how super-great it was to work with so-and-so, and how the film is sure to be the best thing since *Citizen Kane*. Obviously if you watch enough of this bland, back-slapping, studio-friendly gibberish you'll be tempted to swear off extra features for life. But don't do it! Because if you look hard enough you can find genuinely satisfying bonus content – and I'm not just talking about multi-angle functionality on porn DVDs.

Independence matters

A couple of weeks ago I revisited the *Alien Quadrilogy* DVD box set, specifically the additional documentaries and featurettes; informative, insightful and detailed pieces that reminded me just how great extra features are when done right.

Coincidentally, the man behind the *Alien Quadrilogy* extras, DVD producer Charles de Lauzirika, was recently involved in a discussion that highlighted many of the contemporary problems with special features. While nattering at this year's San Diego Comic-Con about the *Transformers 2: Revenge of the Fallen* DVD he's currently working on, Lauzirika showed a video of Michael Bay's on-set antics when things don't go his way. The other DVD producers on the panel claimed the short demonstrated the need **for hiring independent producers to make the extras**, as this is the kind of thing a major studio would never make on its own. Lauzirika agreed: 'If you show a happy-go-lucky, everything-is-fine documentary, who cares if the film turned out great?'

However, all is not lost. There's a light at the end of the tunnel, in the form of Blu-ray. I've been dismissive of many BD-exclusive extras in the past (an interactive shooting game you can play while watching the film? No thanks), but two recent discs have given me hope for the future. *300: The Complete Experience* shows that in-depth behind-the-scenes material isn't necessarily a thing of the past, while *Watchmen: Director's Cut's* Maximum Movie Mode provides an innovative approach to old commentaries, where the director can stop the film and appear on screen to point out things of interest; the additional content itself is seamlessly integrated into the film.

While not quite perfect, this makes me think that there's still life left in the concept, and that a lot of fascinating stuff can be done with supplementary material – as long as the studios are willing to invest the money and let participants really speak their minds.

For more wit and wisdom from *The Beek* go to www.homecinemachoice.com/dvd_addict

A fly-on-the-wall documentary about the making of this column has been made by **Anton van Beek**. Expect to see it on the DVD of *HCC The Movie*.



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DEEP FOCUS

Hollywood insider **Jon Thompson** is delighted by the growth of digital cinema – but hopes the multiplexes don't cut corners

It had to happen. At long last (and some would say a little too late) Texas Instruments (TI) has announced that in 2010 it will be launching a 4K digital cinema projector. That's a full 10 years since TI started showing its trial digital cinema projectors in a few choice locations around the world. Back in 2000, TI was telling everyone how good 1.3K projection was!

It took Sony to push TI into launching the 4K system. With a major deal penned with AMC and Regal, Sony had stolen the cinematic high ground from TI. Why go and see a film in 2K when you can see it in 4K? People expect their entertainment to get bigger and better, and cinema needs to do that to survive. There also needs to be a significant difference with the entertainment you find in the home – otherwise why wouldn't you just spend a night at home watching a Blu-ray?

The announcement came with US chain Cinemark announcing a deal with TI's partner Barco to buy into TI 4K. Personally – having seen the Sony 4K projector and thinking it was good – TI needs to have a real showstopper to regain the lead.

Norwegians poised for switch

As for digital cinema in general, Europe seems to be gaining speed again after the madness that the banks created in the global economy. FILM&KINO, the body which oversees the film industry in Norway, has announced that it has signed Virtual Print Fee (VPF) agreements with five out of six studios. Meanwhile, discussions with Sony Pictures are still on-going, thus paving the way to make it the first country to switch over all of its cinemas to digital in a government-led effort.

The UK Film Council program is leading the way with 250 screens in the UK, while other corners of Europe seem to be jumping on the digital bandwagon, too. Euroscop, a chain with theatres in Belgium and The Netherlands, has also

signed an agreement with a European integrator, XDC. Financed by its VPF agreement, XDC will install DCI-compliant digital cinema equipment on Euroscop's 61 screens starting in September 2009 and finishing before the end of the year.

Palace Cinemas, a leading Central European exhibitor, is also working with XDC to deploy digital cinema throughout its 170 screens. Budapest-based Palace is the largest theatre circuit in Hungary, the Czech Republic, and Slovakia. Of course, XDC will use the CineStore server it manufactures in each installation. Every one of Palace's 20 theatres will be networked and use the CineStore Plaza as its central storage server in conjunction with XDC's TMS (Theatre Management system). No word on what projectors have been selected, though they are sure to be DCI-compliant.

With cinema going all-out digital I hope that the quality of screens will improve. I want big screens with well-presented images. One of the reasons for the rise of home cinema is that operators let their standards slip. At most multiplex cinemas I know, the picture will be out of focus, with insufficient light from the projector. I fear cinema operators just see the switch to digital as a way of cutting costs and reducing the role of the projectionists.

My hope, though, is that people vote with their feet. The BFI IMAX at London's South Bank is out-stripping the Leicester Square cinemas with admissions. Why? It's a better cinematic experience. The cinema is well run and the technical standards are second-to-none! If other operators woke up they would realise they are losing money in their attempts to save it.

4K projection, then, is just a starter. Without the showmanship and the bigscreen experience, it's only technology, after all ●

Are you crying out for digital cinema – or do you prefer to watch movies at home? Let us know: hcc@futurenet.co.uk

As a post-production expert, **Jon Thompson**'s movie credits include *Casino Royale*, *Children of Men* and *Mission: Impossible 3*



Tech diary

The world of AV and film changes fast.

HCC's calendar is here to make sure you don't miss out

Nazi zombies:
Dead Snow
arrives in
hi-def, Aug 31



| Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|---|---------|---|--|--|---|--|
| | | | | 28 The Hurt Locker Director Kathryn 'Point Break' Bigelow makes a spectacular return to the big screen with this award-winning actioner about a US Army bomb squad in Iraq. Hunt it down at UK cinemas today www.thehurtlocker.com | | |
| 31 Dead Snow What's better than having zombies or Nazis as the villains in your film? How about zombie-Nazis! That's exactly what this Norwegian horror comedy serves up. If that tickles your fancy, catch it on DVD and Blu-ray in the UK this Monday | | | | 04 IFA 2009 Europe's leading consumer electronics show returns to Berlin for another six-day marathon of high-tech AV goodness from the world's biggest manufacturers www.ifa-berlin.de | 05 Happy Birthday <i>Grindhouse's</i> leading lady Rose McGowan was born on this day in 1973. To catch her at her very best, check out her turn as the amputee go-go dancer Cherry Darling in the Blu-ray edition of <i>Planet Terror</i> | 06 The Red Shoes Michael Powell and Emeric Pressburger's classic first went on release at British cinemas on this date in 1948. Re-live it in your own home with the recently released and stunningly restored Blu-ray release |
| 7 Gladiator Cross another must-have title off your list – Ridley Scott's epic <i>Gladiator</i> comes to BD in the UK today. The spectacular two-disc set serves up astonishing AV quality alongside some Blu-ray exclusive extras | | 09 CEDIA US Expo 2009 The pro-install community will be jetting off to the Georgia World Congress Center in Atlanta for this trade show dedicated to the custom theatre market. It runs from today until September 13 www.cedia.net/expo | 10 IBC2009 The International Broadcast Convention begins its six-day run of conferences and exhibitions in Amsterdam today. 3DTV looks set to be the hot topic www.ibc.org | 11 Pandorum Strange and disturbing things are afoot in this new sci-fi shocker that arrives in UK cinemas this Friday. The trailer makes it all look a bit Event Horizon (it's even produced by Paul WS Anderson), but that's not necessarily a bad thing | | |
| 14 Angels & Demons Timed to coincide with the publication of Dan Brown's latest novel, <i>The Lost Symbol</i> , this hit sequel to <i>The Da Vinci Code</i> riddles its way onto DVD and Blu-ray in the UK today | | | 17 Elex 2009 The Ricoh Arena in Coventry hosts this two-day event aimed at professional electricians and installers, allowing them to get hands-on with the latest 'sparky' products from the leading manufacturers www.elexshow.info | 18 Cloudy with a Chance of Meatballs Based on the popular kids' book first published in 1978, this 3D toon from Sony Pictures Animation is sure to be a hit with children when it comes to UK cinemas today www.sonypictures.com | | |
| 21 BSG: The Complete Series The entire run of sci-fi series <i>Battlestar Galactica</i> is released on Region B BD today. Spanning no less than 20 discs, this mammoth set is right at the top of the HCC team's most-wanted list www.syfy.com | | | 24 HCC #173 Start saving your pennies for HCC #174. Your favourite home cinema magazine hits the stands this Thursday, packed with hardware tests, installs, features, outspoken opinions and full-on software reviews www.homecinemachoice.com | | | |

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E & OE HCC/Issue 173



VISIONS

Steve May quizzes Panasonic's chief technology officer Eisuke Tsuyuzaki about his plans for 3D Blu-ray



Titanic vision: James Cameron's sci-fi epic *Avatar* will be the first disc released for Panasonic 3D Blu-ray

Eisuke Tsuyuzaki is a man on a mission. As Panasonic's newly-appointed chief technology officer, he's been given the task of not only rallying fellow Blu-ray hardware manufacturers behind Panasonic's vision of a 3D future for Blu-ray, but also plotting the brand's strategic path through what has become a minefield of new technologies.

Trying to second guess the future of modern tech is likely to be a thankless challenge, but it's one Eisuke seems to relish. As the former managing director of Panasonic Hollywood Laboratory (PHL), he was instrumental in the development of Blu-ray coding technologies and has become a tireless evangelist for the format.

HCC caught up with Tsuyuzaki-san while he was in Europe for an update on *Avatar*, the 3D SF spectacular directed by James Cameron with not a little support and encouragement from Panasonic – *Avatar* is tipped to be the launch title for the brand's 3D Blu-ray crusade next year.

HCC: So how much of your time is currently being spent on 3D?

Eisuke Tsuyuzaki: About 90 per cent, whether

it's talking about standardisation or creating alliances. This is a movement we're trying to create – and it's slowly picking up. We have the Disneys and Camerons of this world helping.

My part is to get the home environment sorted and moving. But it's not just about 3D. There are other issues we need to sort out: IPTV, networking compatibilities...

So why is Panasonic such a vocal supporter of 3D?

The core of our strength at PHL was developing AVC codecs and advancing and raising the bar for Blu-ray, BD+, BD Live. That's why I think our players have always been a little better than the rest and why we've been able to stay six months ahead of the competition. We think we can extend that position with what will be a quantum leap in technology.

Blu-ray 3D is not just another profile. We've been demo-ing 3D since 2008; at CES we said we would create an authoring facility; at NAB we said we'd come up with a lot of professional gear. We're on an evolution from BD to Blu-ray 3D.



OF 3D

Some people remain sceptical about the value of 3D. Is it really going to happen?

Yes. It's not going to be easy, but based on very compelling business reasons, for studios and manufacturers, and based on consumer reaction, we will need to finish the 3D Blu-ray specification this year. I think 3D may be a catalyst to change all of our products. Not just TVs. To make everything not just hi-def, but high-definition plus 3D. That's the great promise.

But why should anyone care about 3D? Isn't it just a gimmick?

It's immersive. It's like 7.1 audio. Why do you need two more speakers? It's subtle, but it's better. One could argue that audio was already providing that immersive experience. Well, now the picture is catching up.

When will a standard be agreed?

September could be an interesting month... I think the licensing could be completed by December. We need as an industry to move forward quickly. There's enough confusion about 3D already. We need a clear path; how it can be done. Now that hi-def is mandatory in the US, that's a great infrastructure to piggyback 3D on.

So where does that leave traditional 2D HD?

I'm not saying that 2D is dead. There will still be a lot of 2D. Probably the transition from 2D to 3D will take five to seven years, if you look at any major transition in consumer electronics it takes

probably seven years. More recently, with digital technology, it's getting shorter. But if we don't do it now, everyone is going to go in different directions and it will not be successful.

Some might argue that the future of home video is with downloads and streaming, not packaged media. We're seeing a lot of strategic partnerships to stream video content into the home...

Everyone is trying to get into the home. Microsoft wants to get into the living room. They have a point of view. Their Xbox 360 is not quite there yet. But the idea that you will want to be able to move things around the house, by any means, is percolating. But it's predicated by very complicated political/business/DRM issues. Realistically though, there's not one solution. In most people's home I would guess there's a combination of wired and wireless networks, so given all the complications there has to be a hybrid coexistence model. When it comes to networking, often the dumb, simple approach is best. Just don't expect the users to be engineers.

BD Live was touted as a killer app for Blu-ray, but it has struggled to find its own killer app. Blu-ray in general seems to be underperforming by some estimates...

Theoretically, you need compelling content that will encourage users to attach their BD players to a network. Folks like Disney are now totally



Panasonic's technology visionary catches up with one of his favourite magazines...

Business of Blu-ray

Despite some big disc sales for the obvious blockbusters, there's a sense that Blu-ray has yet to prove itself as a commercial replacement for DVD. It may seem to some that Hollywood has already started to look online for its next big revenue stream. So will Blu-ray ever pay its way?

Panasonic's Eisuke Tsuyuzaki believes it can, and thinks he knows how. But the devil remains in the details.

'I've always felt, and I still believe – I may be in a very small minority – that you have to have a revolution in the business model to make things work. When VHS arrived, it started a whole new industry in video rental. DVD really took off when the sell-through market developed. So what do we do for Blu-ray if the model is just the same? I think that maybe multiple transactions *after the fact* could be a new business model.

Look at financial earnings for games studios like EA or those working in network games; you can earn your way up through the ranks of an online game or you can accessorise. These micro transactions/micro payments are an untapped area which could open the flood gates.

If you analyse the history of movie business models, it's either: a recent transaction, subscription, or advertising. Those are the three flavours. So how can we find something different? You add micro-payments, whether it's e-commerce or micro-payments. We haven't quite figured it out yet. I'm a firm believer in this and ultimately we will figure it out...'



Panasonic's Eisuke Tsuyuzaki is looking for a revolution

Developing the 3D Blu-ray codec at Panasonic's Hollywood Laboratories



rebooting their BD Live approach. Originally, they had a very Disneyesque point of view, but it's being retooled for the *Snow White Diamond Edition* Blu-ray.

Rolling out 3D is not going to be easy. There's plenty of competition in waiting. Sky has been very vocal about its own 3D broadcast plans. Can 3D Blu-ray compete?

From what I can understand, Sky's is a side-by-side system, meaning you split a high-definition signal into two, which when you think about it, is roughly less than NTSC in quality. Based on that I would guess that it will be less than what BD will offer. There's nothing wrong with having sports coverage on TV in 3D, in fact it's a compelling reason to get hooked on 3D. I'm all for it. But a broadcast standard is a long way off. The EBU [European Broadcasting Union] are talking, but that's about it. So what has the most inertia? I would like to say Blu-ray, and it has to come out next year. Why next year? Because of *Avatar*, *Toy Story 3*, *A Christmas Carol*. These are big titles and the studios will simply say anaglyph is not going to be good enough.

You're asking a lot from consumers. Not only do you have to invest in a new display, but for your proposal you'll need a new Blu-ray player, too...

Once upon a time we had PAL and we asked people to invest in high-definition. It's that kind of transition. If we believe this could be

something to re-generate all of consumer electronics, something that's quite distinct and different, it's up to us to offer you the consumer the choice. That's why we will be introducing a full range of products in 2010. It remains to be seen if the public embrace 3D; we think there's a good chance that they will. But there are a lot of variables.

It's possible that Panasonic may find itself pitched against rival propositions. For example, Sensio appears to favour a half-resolution system for packaged media (much like that to be offered by Sky). Are you heading into another format war?

We are committed to Full HD. We've created a benchmark for Blu-ray, why on earth would you go back? We are working with Sensio, Dolby and other worthwhile contributors.

But what if the Panasonic proposal isn't adopted by the Blu-ray Disc Association?

The BDA will not go to a proprietary standard; we (the manufacturers) will all decide what it will be together. A half-resolution system means that users will not need to upgrade their current players. But what does that mean? For a studio, it means you will have to create a separate 3D disc from the 2D release; double inventory. No studios want that.

Our view is that 3D playback should always be backwards compatible. This means single-inventory discs. A 3D disc must play back in a regular BD player and offer 1080p resolution ●

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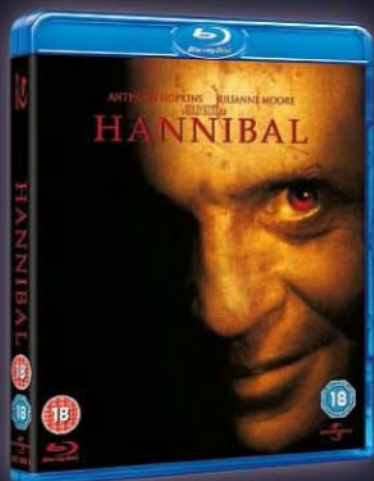
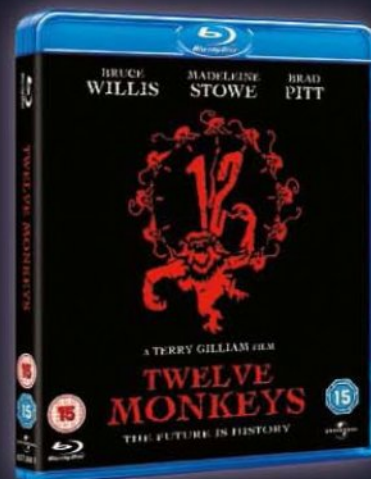
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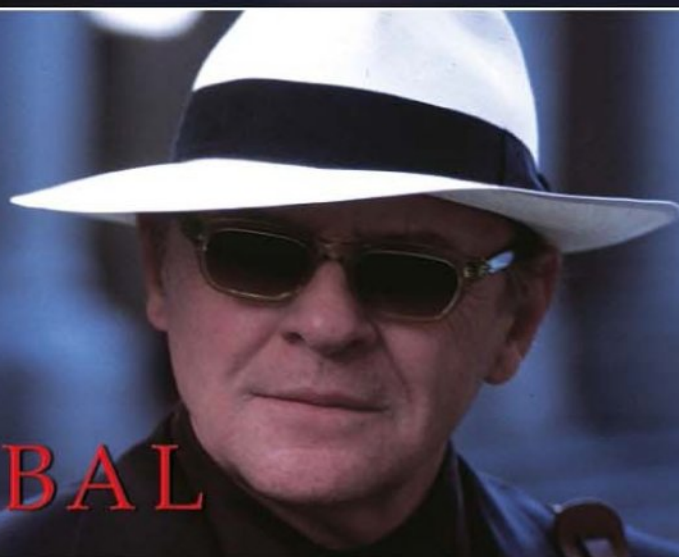
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The clarity of Blu-ray has given older films a chance to be seen in a way they haven't looked since their original cinema release. Yet to make this possible often requires considerable restoration work, which takes time, money and collaboration.

Powell and Pressburger's *The Red Shoes* (1948) is one example. Given a red carpet premiere at this year's Cannes Film Festival, and a limited UK cinema re-release alongside new DVD and Blu-ray editions during the Summer, this classic Brit flick was lovingly restored by the UCLA Film & Television Archive in association with the BFI, Martin Scorsese's The Film Foundation, ITV Global Entertainment and Janus Films. Funding was provided by the Hollywood Foreign Press Association, The Film Foundation and the Louis B. Mayer Foundation.

HCC chatted with Fiona Maxwell, Director of operations at ITV Global Entertainment, about the work that went into the film's restoration, and other cinema classics, for the benefit of modern audiences...

HCC: How did you get involved with the restoration of *The Red Shoes*?

Maxwell: The main role of ITV Global initially is that we are the worldwide rights owners; we own the film as part of the Rank library. The original approach for the restoration came from a lady called Margaret Bodde, executive director at Martin Scorsese's The Film Foundation. Scorsese is a huge fan of Michael Powell and his films, and is working hard to see the movies restored. And because the majority of the funding was American and Scorsese and his foundation particularly wanted to use Bob Gitt from UCLA to supervise the restoration, they needed our agreement to allow the film elements to leave the country. That's always a big issue, because these are the original elements.

What particular challenges did this project bring with it?

When you want to do a restoration, you need to go back as far as possible, so we wanted to go

The Red Shoes

Anton van Beek reveals the secrets behind the Blu-ray restoration of Powell and Pressburger's classic, *The Red Shoes*

back to that source. This film was shot in Technicolor, so you've got your yellow, magenta and cyan strips of negative. And the problem with that is, when you have three strips of camera negative, they will all have faded and shrunk in different ways over the years.

Another problem came from the way the original negatives were stored. A 'safety print' was created from the Technicolor negatives many years ago, and it was thought this would suffice. Yet they didn't put much thought into the storage of the original elements, so it developed mould. It was only when we needed to ship the negatives to the US that the mould was discovered.

The mould really was a challenge because in some cases it had eaten into the emulsion, so it was a case of cleaning, scanning and going back. There are always going to be damaged frames. And in getting the colour grading right, there was a lot of to-ing and fro-ing with Thelma Schoonmaker Powell (the widow of Michael Powell and Scorsese's Oscar-winning editor). There are just so many opinions. You have the archivist Bob Gitt's view, you've got Thelma's view, you've got Scorsese's view. So sometimes things take longer to agree on these collaborations.

How was it restored?

We were trying very hard to restore the film photo-chemically, as it's not as expensive a process as digital, but it was eventually decided that it had to be a digital restoration, which meant that all of the three strips needed to be scanned at a very high resolution. It was a shock we couldn't go with photochemical, and things had to be halted while more funding was found. It ending up costing around \$500,000.

Another issue was did we really have to go to 4K? Could it be 2K? There's a big difference in cost between them. But when you are actually preserving a film and going back out to 35mm you absolutely have to use 4K because you are actually trying to represent the negative again.

Warner Bros MPI (Motion Picture Imaging) were chosen in Los Angeles as they're experts in 4K scanning and restoration. Bob Gitt supervised the scanning with Warner and, getting back to The Film Foundation, Scorsese and Thelma approved just about every stage – every piece of grading, every piece of scanning went back to them.

How long did it take?

It was well over two years from start to finish getting the restoration done. >

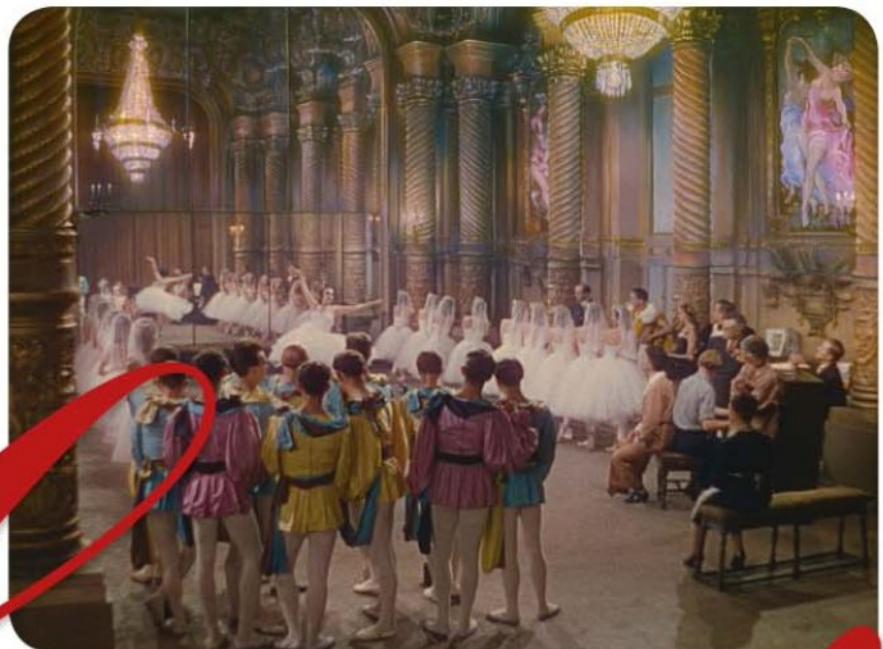
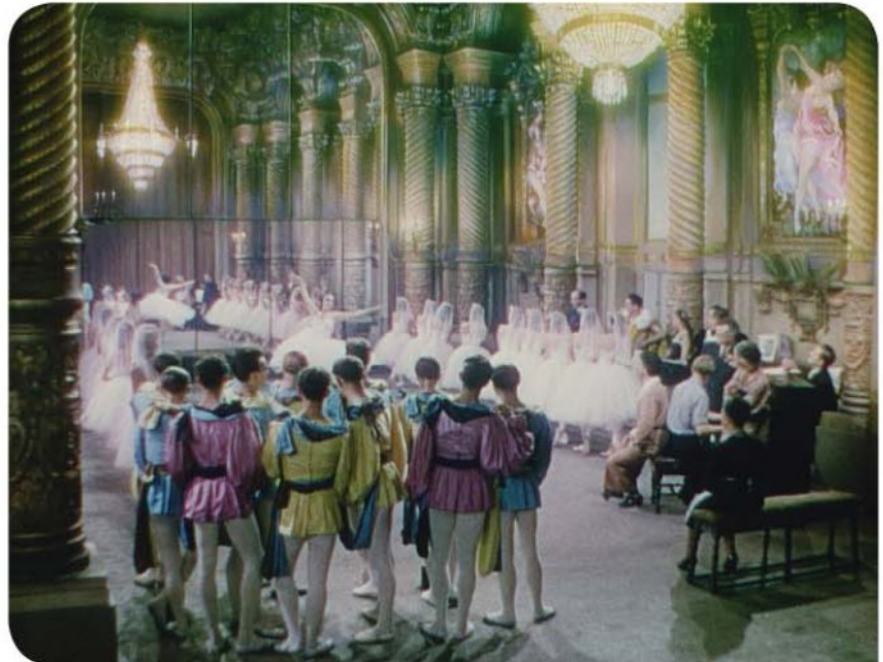
Maxwell's house:

Fiona Maxwell is Director of operations at ITV Global



Better than ever:

The newly-restored print reveals the original lushness of the cinematography



Shoes

28 THE RED SHOES



Bright eyed:
Actress Moira Shearer benefits from lifelike skin tones, while the candelabra shines as if new

And when I say it's a digital restoration, everything has been scanned at 4K, it's been recombined, (because you've got three-strips that have to be recombined to get rid of any registration problems), re-graded and output back to film.

The key thing here is that, by scanning at 4K and putting it back to a 35mm composite negative you're preserving it twice, as a digital file and on 35mm film. That opens up all the markets to re-release theatrically, which we're doing with Park Circus Films in the UK and internationally, and that means both in a digital or print form in cinema. And then there's what you're readers are more interested in, which is we went from the 4K master output to a 1080 HD master, which has been used to author the Blu-ray version. And my God, it looks beautiful, absolutely beautiful.

When dealing with this kind of restoration is it important in getting people who were originally involved in the movie's production, to ensure that what you're doing isn't altering the original look of the film in any way?

Absolutely. People are often concerned about a digital restoration. Scorsese and Thelma were, they didn't want it to be digital. And the real thing is keeping the original integrity of the film and the filmic look. It's not over-processed. It's not too harsh.

In fact, I first got to know Thelma Schoonmaker when we did a restoration on *Black Narcissus* some years ago. And I sat down with original cinematographer Jack Cardiff and showed him the colour-grading on *Black Narcissus*. Jack was able to remember with pin-sharp accuracy what type of filter was used in a particular shot, what type of lighting he'd used.

Well it's clearly worth it, as the *Black Narcissus* Blu-ray looks sensational.

Thank you! We're really, proud of it. That was all done by my team here in the UK, so it can be done. I'm always quite sad when we have to send a restoration to be done out of the UK. But it's about funding. If it's digital, which costs a lot more, then sometimes you have to give in. But that was a complete photo-chemical restoration.

Attack of the mould: The original elements were so badly eroded that a digital restoration was chosen over the more affordable photo-chemical option



So is it difficult to find funding in the UK for these projects?

It is. And it's not just us. We have bodies like the BFI and BAFTA, but people struggle for funding. It's not impossible, though. Another success story, last year, was working with The David Lean Foundation and the BFI to restore eight of our films.

That presumably included the *Brief Encounter* restoration that hit Blu-ray earlier this year.

Yeah, that looked pretty stunning for a B&W film!

Well that's a frustrating thing, trying to persuade people B&W looks great in 1080p...

Absolutely. Even in the TV world it's quite difficult. The feedback from our sales team claims that if you're on HD and you're channel-hopping, when you come across black-and-white you're not going to hang on there. Viewers want to see colour. But you are absolutely right, a beautifully restored black-and-white movie in hi-def looks gorgeous.

Where we do win is with the Blu-ray market, because then you're talking about collectors. When a classic is restored to its original form it's worthwhile putting it on Blu-ray, because people want to own that, and they want the extras, the interviews, the stills galleries, they want everything that comes with it.

That's an interesting point of view, because the message we've been getting from major Hollywood studios is that they're having a very hard time with catalogue releases on Blu-ray – the market only wants *Transformers 2* and films of that ilk...

I was told that at first, because I was pushing at the time to get more restorations done. I was continually told, 'It's the 18-to-25 market and it's all about the latest Hollywood films.' But I counter that with, I'm sure that there's another big market out there – the 30-plus audience who wants a real catalogue, a library of classics. Those are the films that these people really want to keep. Are they really going to watch *Transformers 2* again and again and again? ●

The Red Shoes: Special Restored Edition

ITV DVD, Region B BD, £20 Approx (HMV exclusive)

A flop on its original release in the UK, this Technicolor tale of a young ballerina (Moira Shearer) torn between the composer who loves her (Marius Goring) and the impresario who takes her under his wing (Anton Walbrook) is hailed as a major influence by filmmakers including Steven Spielberg, Francis Ford Coppola, Brian De Palma and Martin Scorsese. It's a remarkable piece of cinema, but one that few have ever had the chance to see in its original glory. Until now...



This new Blu-ray edition is a revelation – the amount of work put into restoring the original lustre to the Technicolor elements is visible in every shot. Fine detailing is abundant, and blacks are deep and stable, but best of all is the colour presentation. Gone are the faded tones of previous releases, and in their place is a rich, warm and opulent palette that sucks you into the movie. The presence of fine grain gives the image a filmic feel, and there's nary a trace of print damage to be seen.

While the audio isn't as immediately impressive as the imagery, ITV DVD has included both a 'lossy' Dolby Digital 2.0 track and an uncompressed 1536 kbps/48kHz LPCM 2.0 track. Both have been, in the words of Fiona Maxwell, 'De-clicked, de-hissed, de-popped and de-crackled'. It's hard to argue with the clarity of the resulting audio – especially the LPCM mix.

If there's any problem, it's with the extra features. The quality of the material – *A Profile of the Red Shoes* doc, *The Ballet of the Red Shoes* featurette, a Cannes 2009 introduction by Scorsese, an interview with Schoonmaker, the theatrical trailer and a photo gallery – is undoubtedly very high. However, it's a real shame that ITV DVD hasn't licensed the chat track recorded for the film's 1999 US Criterion Collection DVD.

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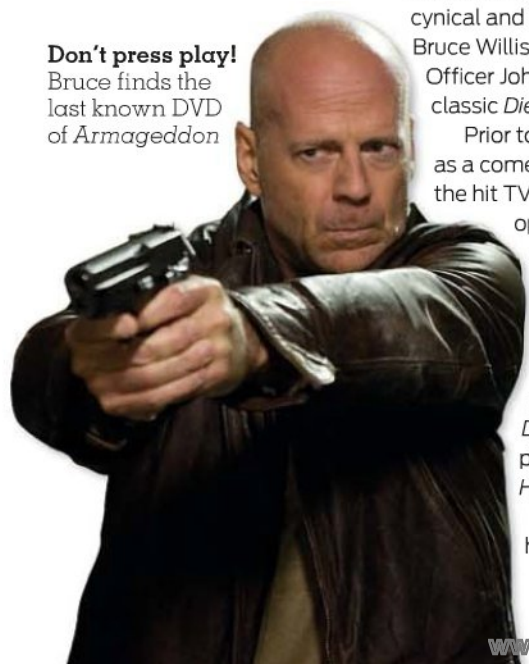
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Anton van Beek salutes an icon of action heroes

Yippee ki-yay!

Don't press play!
Bruce finds the
last known DVD
of *Armageddon*



The Hollywood action stars of the mid-80s were, like all else in that decade, big and brash – the bodies of men like Arnold Schwarzenegger and Sylvester Stallone were part of the special effects.

But in 1988 a film redefined how the action man should look and act... dishevelled, balding, cynical and fallible. One of us. And that's what Bruce Willis delivered with his portrayal of Officer John McClane in the seminal action classic *Die Hard*.

Prior to *Die Hard*, Willis had been seen mainly as a comedic actor thanks to his starring role in the hit TV series *Moonlighting* and a turn opposite Kim Basinger in the 1987 flop *Blind Date*. However, the worldwide success of *Die Hard* put the actor on a new track, and before long audiences were queuing up for the likes of *Die Hard 2: Die Harder*, *The Last Boy Scout* and *Striking Distance* (many of which invariably played out like variations on the *Die Hard* theme).

And then something truly surprising happened, Bruce Willis proved he

wasn't just an action icon, but an actor. Roles in *The Bonfire of the Vanities*, *Mortal Thoughts* and the willy-waving *Color of Night* stretched Willis' talents but all failed at the box office. But it all changed when Quentin Tarantino came knocking.

Cast as the aging boxer Butch Coolidge in *Pulp Fiction*, Willis proved that not only could he shoot people and wise crack, but also act and emote in a way that the Stallones and Seagals of this world rarely manage. He hasn't looked back since, gaining plaudits for roles in movies such as *Twelve Monkeys*, *The Sixth Sense* and *Unbreakable*.

But thrilled as we have been with this transformation, the great news is that despite growing acclaim for his acting, Willis refused to turn his back on the kind of film that brought him stardom in the first place. For every contemplative drama about little kids seeing ghosts, there's a mega-budget action spectacle about asteroids destroying the world or yet another *Die Hard* sequel to enjoy. Even now he has a brand new sci-fi flick called *Surrogates* opening at cinemas this month, along with the Kevin Smith buddy-cop comedy *A Couple of Dicks*, and even a rumoured cameo in Stallone's *The Expendables* slated for some time in 2010 ●

Quintessential Bruce... Inventing bungee jumping in *Die Hard*...



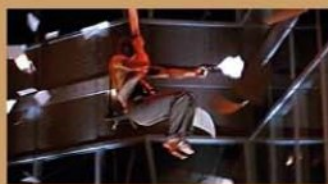
1 Boom boom pow!

When their plan goes awry, the terrorists let off bombs on the building with McClane on top.



2 Jump for it

McClane ties a firehose around his waist, and jumps off the side of the roof before the explosion gets him.



3 Hangin' tough

Dangling hundreds of floors up, McClane realises that he has to shoot his way back into the building.



4 Them's the breaks

McClane smashes through the window on the return swing just before the firehose comes loose.

Must own...



Die Hard

20th Century Fox → All-region Blu-ray → £23 Approx

In this defining action movie of the 1980s, Willis was rarely better than here playing Officer John McClane, a New York cop trapped in an office building overrun with hostage taking terrorists.

40.19: 'Now I have a machine gun. Ho. Ho. Ho.' McClane sends a festive message to the rest of the terrorists.

76.20: McClane improvises some explosives and drops them down a lift shaft to great effect. The resulting explosion has never sounded better than it does here in lossless form.



The Fifth Element

Pathe → R2 Special Edition DVD → £23 Approx

This gaudy slice of sci-fi from director Luc Besson might make little sense, but it's a feast for the senses and shows that Willis is happy to poke fun at his action man screen persona.

30.46: A scantily-clad Milla Jovovich makes a jump for freedom before crashing through the roof of Willis' hover-cab, kick-starting a cracking chase sequence. And it's not just the SFX that impresses, there's also some great use of directional audio in both the DD and DTS 5.1 soundtracks.



Sin City

Walt Disney → All-region Blu-ray → £24 Approx

The pick of the stories in this Robert Rodriguez' pulp thriller saw Willis star as aging cop Hartigan, who is framed for a crime he didn't commit and comes out of prison looking for revenge.

10.20: 'I take his weapons away... both of them.' Detective Hartigan won't let a gunshot wound and a dicky ticker stop him from rescuing little Nancy.

97.16: 'Eyes to the stage, pilgrim.' Hartigan takes in the scene at Kadie's bar, where Jessica Alba is dancing erotically in glorious 1080p.



12 Monkeys

Universal Pictures → Region 2 DVD Blu-ray → £16 Approx

Former Python animator Terry Gilliam serves up a mind-bending sci-fi classic. In one of his best roles, Willis is sent back in time to find out about a plague that could destroy humanity. Or is he?

02.07: Low resolution in the non-anamorphic 1.85:1 transfer can be seen in this close-up. The impending UK Blu-ray release will hopefully deliver the imagery this excellent film deserves.

41.40: A fleeting visit to the trenches of World War I gives the dynamic Dolby Digital 5.1 soundtrack more to do.

Worth seeing...



The Sixth Sense

Walt Disney Home Entertainment → All-region BD → £24

Willis deserves major kudos for delivering a fantastically subtle performance as child psychologist Malcolm Crowe in M Night Shyamalan's excellent debut film.

12.23: Our first look at the careful colour coding used in the movie comes with the bright red church doors the young boy runs through.

76.20: When the ghosts get angry, no hiding place offers respite for the young child. Check out this brilliantly executed scare scene to see what we mean.



16 Blocks

Warner Home Video → All-Region Blu-ray → £25 Approx

An unofficial re-working of Clint Eastwood's *The Gauntlet*, this 2006 action flick finds Bruce playing the part of an aging cop escorting a witness (the fast-talking Mos Def) from police custody to the courthouse.

13.27: As Bruce kills his first bad guy, the surround effects mute and match the onscreen action as he freezes – impervious to the danger around him.

55.13: Bruce and Mos Def hijack a bus, cueing the biggest set piece and most abrasive use of audio in the movie.



The Last Boy Scout

Warner Home Video → R2 DVD → £14 Approx

This underrated gem from director Tony Scott pairs Bruce Willis' burned out detective with Damon Wayans' former LA Stallions quarterback as they try to crack a murder case. Written by Shane 'Lethal Weapon' Black, the script is packed with action and great one liners.

29.09: A nighttime ambush culminates in bullets, blood, and bad ass Bruce killing bad guys. Yay!

61.05: Easily the best sequence. A bad guy 'punks' a captive Bruce, regardless of a muttered warning, to fatal effect.



Striking Distance

Sony Pictures → All-Region Blu-ray → £20 Approx

The rebellious cop shtick looks tired in this ludicrous serial killer thriller in which Willis plays a water rescue policeman who keeps finding dead women floating downstream. The direction is poor, action dull, and Sarah Jessica Parker plays a policewoman!

09.53: Bullets whizz by, tyres squeal, sparks fly, and crates of beer bottles smash – the standard car chase.

66.20: With no bullets left while pursuing a suspect's car by boat, Bruce switches to flares instead.

Living Entertainment

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These photos feature just a small selection of Musical Images' installation work over the past 20 years.



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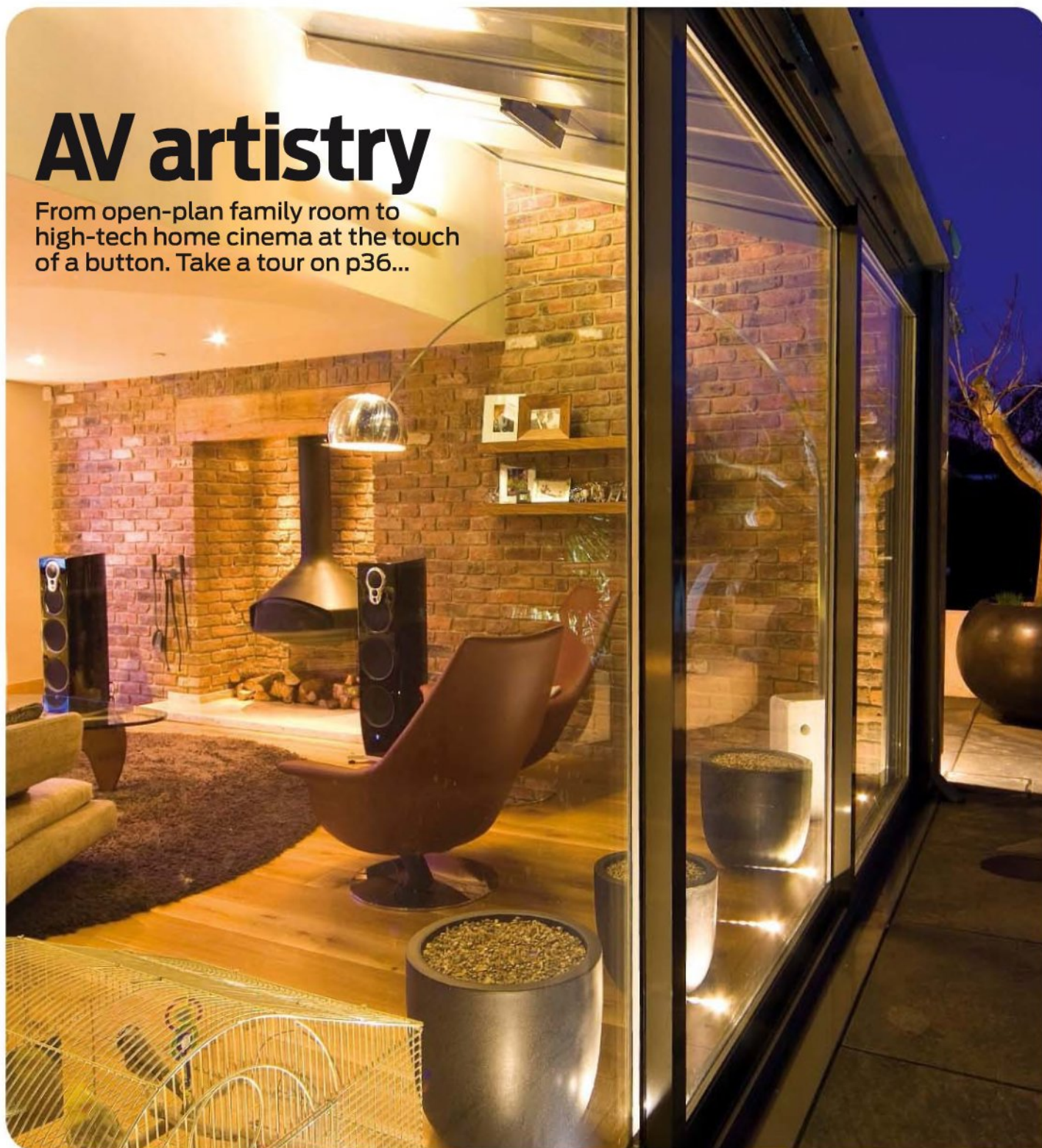


INSTALLS

→ **Smarthome highlights** FORTRESS High-end home cinema seating
AUDIOCONTROL Custom install-tailored AVR-1 CRESTRON HDMI switching comes of age
PEERLESS SmartMounts for supersized TVs PRESTIGE AUDIO From guest bedroom to dedicated
home theatre CERTIFIED AV-HOLIC! An HCC reader guides you through his home cinema setup

AV artistry

From open-plan family room to high-tech home cinema at the touch of a button. Take a tour on p36...



Movie seating built to last

Planning a cinema installation? Don't forget the all-important seating...



Lights, camera, inaction:
Put your feet up and your
drink down with a £1,600
Matinee armchair

If you're really serious about CI – and can afford it – you'll want to invest in cinema chairs for that at-the-Odeon feel. And now one of the best American CI seating solutions is available over here in the UK: Fortress.

Fortress has been manufacturing high-end furniture for over 60 years and has taken its experience producing serious, quality seating solutions into the home cinema market.

To really pass muster in the US CI contract market, chairs need to pass ANSI (American National Standards Institute) and BIFMA (Business and Institutional Furniture Manufacturer's Association) standards – and Fortress are built to these stringent specifications.

Chair frames are a combination of birch plywood and alder, creating an extremely strong chassis capable of being modified as required. All connections are metal to metal (so no screws) and attach to a commercial-grade steel mechanism. In other words, these puppies are seriously well built. And, of course, they look like the real deal, too.

Fortress President Gabi Wolper spoke exclusively to *HCC* about the brand, and explained that it is the company's staying power as a producer of top-quality furniture that has stood it in good stead in the custom market.

'Over six decades of producing furniture shows we are here to stay, and our goal has always been

to give the customer what they want, not what's on the shelf,' he says.

'Home theatre is all about a custom environment – a place to truly experience audio and video. Fortress produces seating products to promote that experience. Whether it's custom sizes to enhance sight lines, or designs to match your particular theatre, Fortress has the know-how to meet your need. And all this without sacrificing ergonomic comfort.'

Fortress offers an extensive range of cinema chairs with a vast variety of functions, including motorised recliners and storage arms with drawers (perfect for your movie snacks!). They range from the sofa-esque Moulin Rouge – which can be specced with corner units and fabric skirts – to the 1920s-styled Deco, which save space with a dual, 'common' arm shared between two chairs. Perhaps the most UK-friendly are the Matinee chairs, as pictured here in a professional install. They boast a reclining system, with leg supports, space on the arms for your popcorn or fizzy drink, and can also be configured with shared arms.

Perhaps even more exciting, Fortress can be specified to include the D-Box motion system (see *HCC* 171).

Prices start at around £1,600, and Fortress chairs are only available from official UK dealers. For details on accredited Fortress dealers, go to www.pulsemarketing.com.

Complete cinema control



Launched at last year's US CEDIA Expo, AudioControl's AVR-1 AV receiver is now available in the UK

through Pulse Marketing. Developed using AudioControl's new hi-def theatre platform, the AVR-1 is a serious piece of kit, offered exclusively to custom installers to specify for your room.

Boasting 120 individual input and outputs (including 5-in, 2-out HDMI), the £6,000 AVR-1 supports the latest HD surround codecs from Dolby and DTS along with traditional formats.

'This new generation platform was designed to maximize the theatre experience on all levels, offering sonic pleasure and video intoxication,' Chris Kane of AudioControl told HCC.

Monster mount



Described somewhat dramatically by an industry insider as 'the mother of all mounts', the

top-of-the-range Peerless SmartMount SWS550 is one heavy-duty piece of articulating wall-mount technology. With the ability to support a massive 90kg – or 71in screens – it boasts a one-touch tilt function, which works even up to 90kg.

A 2.5-degree level adjustment enables the pitch of the screen to be altered – so even if the bracket isn't mounted exactly square to the wall the TV can be levelled. Integrated cable management moves with the arm, too.

Prices vary depending on screen size. Head over to www.bbgeu.com for more information.

Media solutions



DF Solutions Ltd, UK, manufacturer of multiroom media servers, upped the ante at this year's

CEDIA Expo by announcing an exclusive distribution deal with AWE – one of the CI trade's leading distributors.

DF media servers are designed for integration into installs where home automation and centralised media storage are key. The DF BASE ITB server and DF LINK 'client' offer comprehensive multiroom integration, fully controllable via virtually any commercially available universal remote control.

'DF Solutions offers media server products with one of the best interfaces we have seen,' said AWE's Managing Director Stuart Tickle.

More info at www.awe.com.

Wet and wild



The award winning, design-and-build company Harrison Varma recently installed no fewer

than five Aquavision waterproof televisions in one of its luxury houses.

The mansion in north London, which won the *Evening Standard's* Best New Exclusive Home Award, boasts over 16,000 sq feet of accommodation and includes a 20-seat cinema – plus numerous wet areas for the Aquavisions to shine.

Two S4 26in in-wall Aquavisions are sited at each end of the double-ended bath in the master en-suite, and two S4 19in models with Polar White glass feature in the guest en-suites. Finally, a 40in Aquavision is situated by the Jacuzzi.

Signal success

Switchers preserve AV purity

While the pro-install market has been quick to embrace the shift to hi-def content, one sticking point has hindered a smooth transition – HDMI. According to control system specialist Crestron, the cable technology and the copy protection it enables with HD content has been a nightmare for the industry.

'In the HD world the idea is that the content protection stops you copying it, that's the whole point of it. And by doing this they've caused untold trouble for our industry,' says Phil Solomons, Residential Sales Manager, Crestron UK. 'The whole thing with HDMI and High-bandwidth Digital Copy Protection (HDCP) is that it was set up to go from a single source to a single display, no more than seven metres away. And for the install industry that's a real problem!'

But a solution has been found with Crestron's new DigitalMedia range, which are designed for reliable switching and distribution of analogue and uncompressed HD signals across CAT5e/6-based copper wiring or dual fibre cable. 'DigitalMedia is the only complete, integrated solution for the digital age, accepting and distributing all analogue audio and video, hi-res computer, HDMI, DVI, DisplayPort, Ethernet and USB keyboard and mouse control,' Solomons told HCC during a briefing at Crestron's UK HQ.

The DigitalMedia family of products also processes all the embedded data including HDCP, EDID (Extended Display Identification Data) and CEC (Consumer Electronics Control) for optimal system performance, and feature integrated software tools designed to ease the installation process by displaying and managing the flow of all signals and data through the system.



At the core of the DigitalMedia range is a pair of new matrix switchers, the DM-MD8x8 and DM-MD16x16. These were created to manage all the different signals and devices, matching each source's output to the capabilities of the selected displays without using scaling or compression. So every signal is preserved in its native video resolution and audio format to ensure a pure, lossless signal path throughout. Additionally, the matrix switchers use a modular design, so you can choose whatever outputs you want. 'We want to make sure that if you want to switch HDMI that there is still support for legacy products as well,' explained Solomons.

Exclusive to the DigitalMedia range is a new proprietary QuickSwitch HD technology, designed to combat the delays and flickering screens that affect HDMI switching. It works by pre-authorising HDCP keys and maintaining a handshake between sources and the display for fast, uninterrupted HDMI switching. The result is a more seamless HD home cinema experience, something that install companies have been looking to offer for some time according to Solomons. 'Installers have been screaming, saying "We need a solution for this," and now we have one to give them' ●



Solomons: Crestron UK manager reckons he can stop installers screaming



The team at home theatre and smart home automation specialists Finite Solutions had quite a challenge on their hands with this immaculate whole-house conversion. Indeed, after careful consultation it was decided that rather than simply renovate the existing property, it would be easier for everyone involved (and ultimately cheaper) if the entire property was pulled down and rebuilt according to the new specifications, rather than attempting to tweak the previous layout. Blimey.

Are you being served

The main job for Finite's install team was to satisfy the owner's request for a distributed music and HD video system, with a centralised movie server accessible from all rooms with TVs.

The owner was also very keen that technologies in the house should be accessible to all the family, and asked that two levels of control systems could be provided: a basic control system for the multiroom TVs and music that could be used by all the family; and a more advanced control system for the HVAC (Heating, Ventilation and Air Conditioning) and security, as well as the high-end Linn music systems.

For the AV requirements, Finite installed a gigabit Ethernet network. Through this network they could feed an HD Smart-e video distribution system, and stored music to be accessed at the client's request via Logitech Squeezebox media-streaming devices. >

Room essentials

A Bigger is better

When a 50in Pioneer Kuro plasma just isn't big enough, the owner can call on this electronically-lowered seven-foot projector screen for real big-screen thrills

B Style council

The in-wall Bowers & Wilkins loudspeakers used at the front of the room have minimal impact on the aesthetics without sacrificing the audio performance

C Hidden in plain sight

One button activates the lift housing the SIM2 HT3000 projector, along with the electronic Beamax drop-down screen and an automated window blind at the back of the room



If you can't turn your existing house into a 'smarthome', knock it down and build a new one



→ Kit Checklist

Arcam: DiVA DV137 DVD player
DF Solutions: iDyL 160GB Media Server
Virgin Media: V+HD set-top box
Smart-e: HD video distSmart-e: HD video distribution system
Linksys: 24-Port 10/100/1000 Gigabit Switch
Arcam: FMJ P7 power amplifier
Arcam: FMJ AV9 pre-amp processor
Bowers & Wilkins: Signature 8NT in-wall loudspeakers
Bowers & Wilkins: DS3 wall-mounted rear loudspeakers
REL: R505 subwoofer
SIM2: Grand Cinema HT3000 1080p projector
Future Automation: PD2 projector drop
Beamax: Seven-foot projector screen
Pioneer: PDP-508XD 50in Kuro plasma
Future Automation: PSE90 motorised TV wall-mount
Crestron: TPMC-10 Isys i/O touchpanel
Universal Remote Control: MX-900 universal remote
Logitech: Squeezebox1 wireless network music player
Linn: Klimax Kontrol stereo pre-amp
Linn: Artikulat 350a loudspeakers
Silent Gliss: 5400 motorised curtain track

38 INSTALL

When it came to the main cinema room, the decision was taken to integrate it into an open-plan layout that would serve as a large family area – incorporating the kitchen, dining room, music room and home cinema room. For watching movies it was necessary to screen off the cinema space to block out light, and prevent the booming Bowers and Wilkins/Arcam-delivered sound from travelling through to the other areas. This is achieved at the touch of a button, with the music and cinema area separated via an automated curtain track. This reduces the light pollution from the 7ft Beamax projector screen and helps maintain sound quality.

Perfect combination

When you couple all this with the incorporation of eco-technologies into the house (including the ground source heat transfer system and rain water collection system), and the eye-catching interiors, it's no surprise that the whole property was 'Highly Commended' by the CEDIA UK Awards judges earlier this year. Of course, we'd be happy with just the bigscreen theatre room! ●

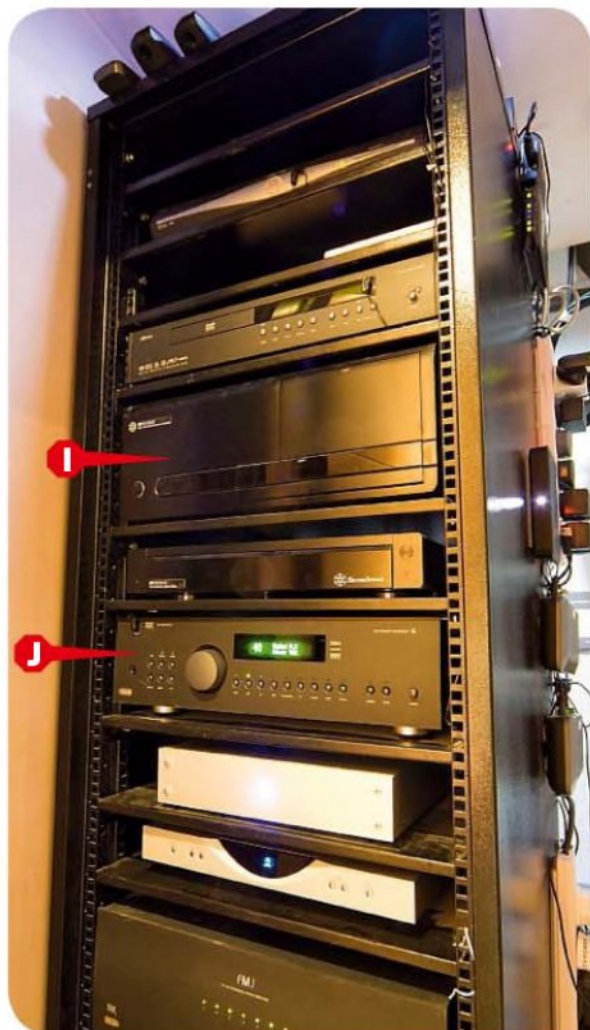
Viewing angle:

The recessed plasma (right) is mounted on an electronic bracket and can pivot out to be watched from the 'music room'



Water disaster:

The kit rack (below) is in the same room as several water valves. This sprung a leak during the installation, ruining much of the AV tech!



D TV set-back

Mounting the 50in plasma in a small recess allows the projector screen to drop down in front of it, almost flush with the wall.

E Squeeze me

One intriguing design feature in the cinema room is another small recess to house the control interface for the Logitech Squeezebox music network

F Rear speakers

The wall-mounted B&W DS3s employ a 5in Kevlar cone bass/midrange and a Nautilus tube-loaded tweeter

G Touch of class

The Crestron touchpanel allows the owners to take full control of the

cinema system, as well as access CCTV camera images; monitor energy usage; adjust temperatures in different areas of the house; surf the 'net; and browse through all the music on the Squeezebox system

H Music room

This pair of Linn Artikulat speakers were specified with a Linn Klimax preamplifier and custom-built DAC for the very best audio quality

I Are you being served?

The 160GB DF Media Server stores hundreds of CDs and DVDs

J Big audio dynamite

At the heart of the cinema room's audio is the THX Ultra2-certified Arcam FMJ AV9 pre-amp processor



Max Payne Motion Picture © 2008 Twentieth Century Fox Film Corporation

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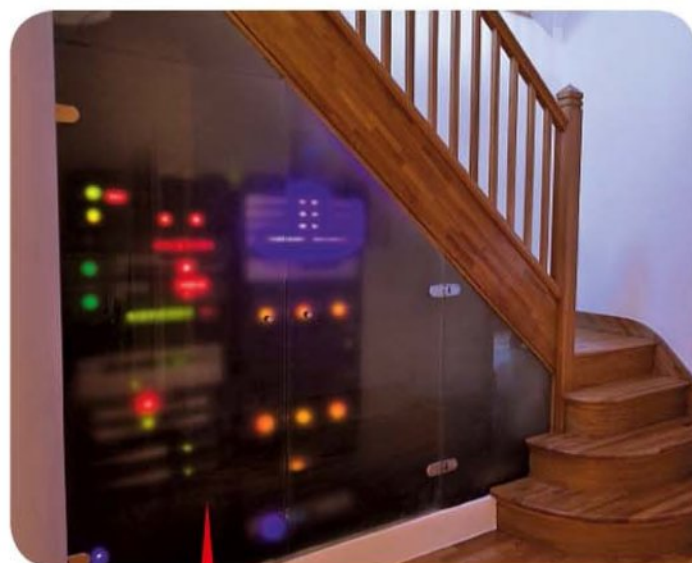
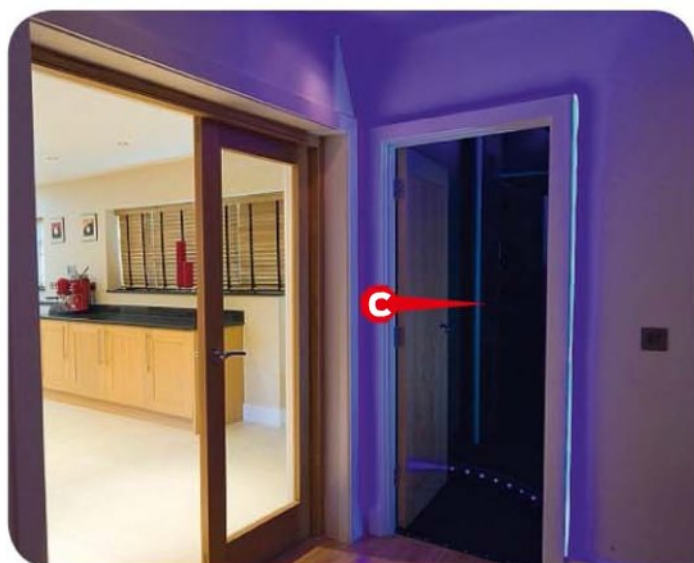
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All that glitters

A former guest bedroom is reborn as
a stylish high-end home cinema



The largely black colour scheme with silver alcantara highlights gives the room 'real impact'





→ Kit Checklist

Genelec: 7 x AIW26 active in-wall speakers
Vibe: 15in subwoofer (supplied by the owner)
Runco: RS1100 Full HD projector, with cinewide lens upgrade
Screen Research: 130in 2.35:1 screen
Cineak: 3 x electric reclining chairs
Crestron: TPMC-8X touchscreen remote
Arcam: AVP-700 processor
Kaleidescape: DVD server
Rako lighting with Silent Gliss blackout blinds and curtains

This stylish Reigate-based dedicated home cinema was a last minute addition to a full 'smart home' installation being undertaken by Prestige Audio. The client was spurred on by a profile of an earlier Prestige Audio install in the pages of *HCC* and had only one request – he wanted the same high-end sound and vision, but with some trick details to make it stand out from the crowd.

The room itself, a former guest bedroom, was quite small (5m x 5m), but neither the owner nor the installer let that dissuade them from going ahead with some serious AV bling. Audio is taken care of by a 7.1 speaker array consisting of in-wall Genelecs, plus a Vibe subwoofer the owner had from a previous system. Getting such a high level of audio output working well in such a small space required plenty of careful setup calibration.

To get the biggest screen possible for the space, Prestige Audio recommended a 130in 2.35:1 projector screen coupled with an anamorphic lens for the Runco projector – this was after the client rejected a 120in 16:9 screen as being too small for his tastes.

Controlling the system is simple. A 'movie' button on any of the Crestron remotes around the property sets off a timed sequence that begins by activating external architrave lighting, closing blackout blinds and curtains, and then firing up the PJ and opening the screen curtains. No wonder the owner describes the cinema as 'absolutely mindblowing' ●

Room essentials

A It's full of stars

The centre of the ceiling was dropped to allow the fitting of a fibre optic starlight system

B Lights, camera...

LEDs are used to add some 'wow factor' by highlighting the floating-slightly-off-the-wall screen

C Behind the blue door

A bespoke architrave was built for outside the door, with recessed blue LED lighting that can be switched on from any of the other Crestron panels throughout the house

D Stay frosty

Because of the lack of space in the main room, the equipment rack is stored 10m away under the stairs

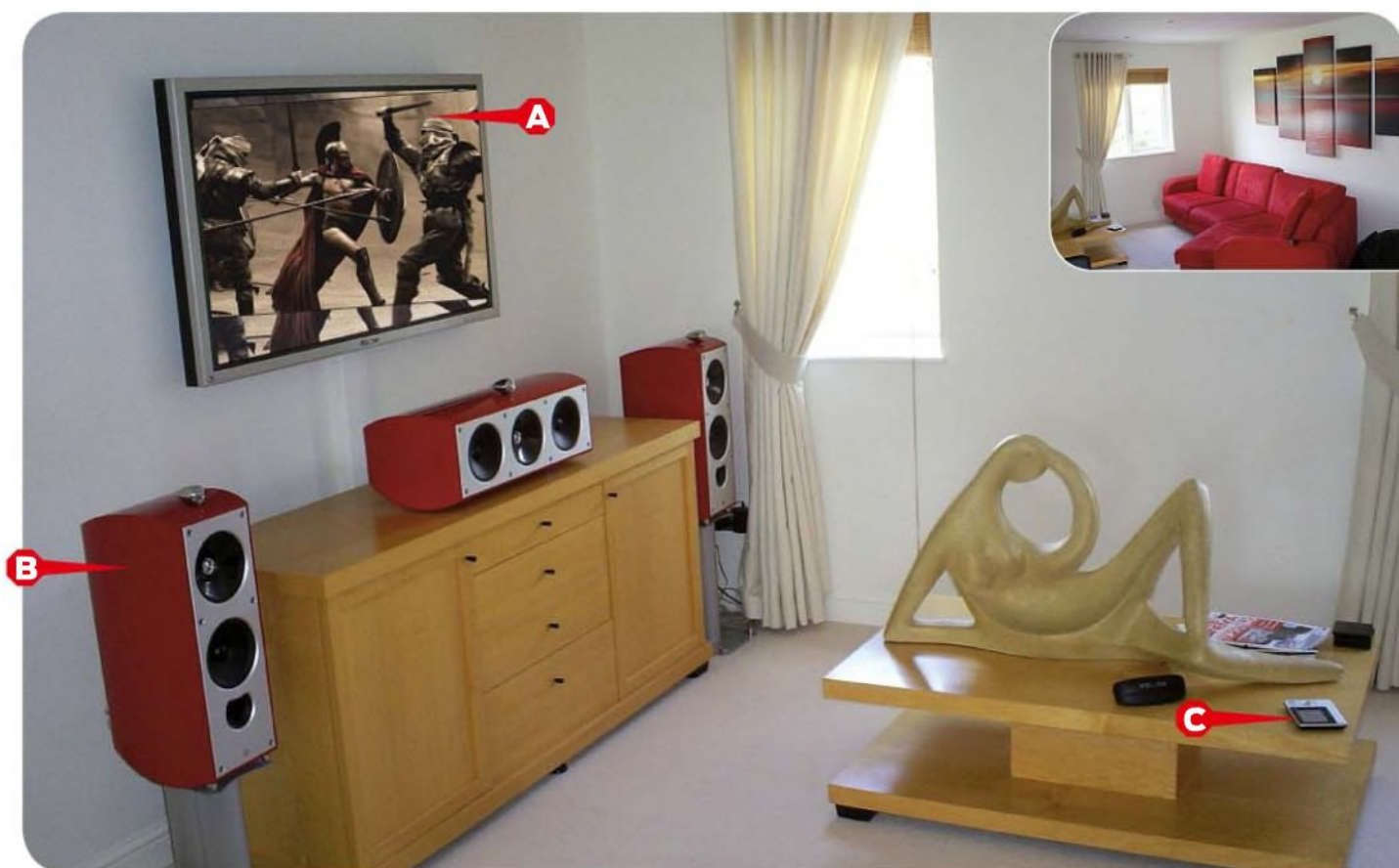
E Chair raising

These electric recliners are from the US brand Cineak



Certified: AV-holic!

Every issue, a fellow **AV enthusiast** invites you to take a tour of their beloved home cinema setup...



Living the dream:
AV-holic Jason has a dedicated cinema room and a 50in plasma in his lounge

Introduce yourself...

Jason, aged 39, going on 16.
What turned you onto AV as a hobby?

About 15 years ago I went out looking for a Bose surround sound system and bumped into my long-lost friend, DVD Andy, who stopped me in my tracks and invited me round to his house to see his Dolby Pro-Logic system, consisting of a Harman Kardon amp, KEF speakers etc. That was the moment I got hooked and he got his title of 'DVD Andy'...

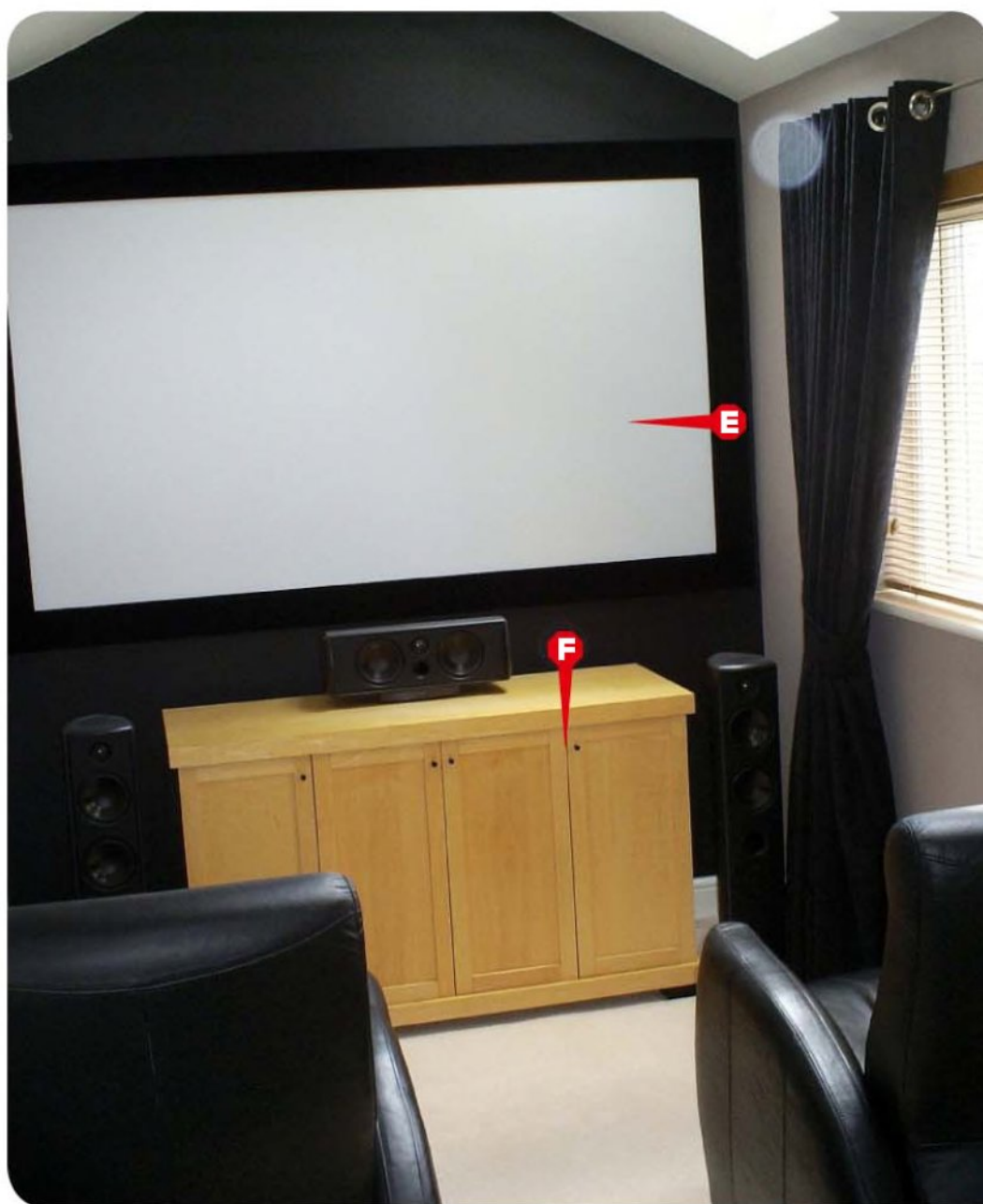
What's your newest bit of kit?

A JVC HD100 projector, Draper projection screen and a Pioneer LX71 Blu-ray player.

What's next on your sound and vision shopping list?

Pioneer's LX81 receiver, a PC





Use the space:

Even though the room is quite thin, Jason has managed to fit three big cinema seats in by placing them in two tiers



Shuttle and a 55in LCD TV for the living room.

Talk us through your system...

In my home cinema room is the aforementioned JVC PJ and Pioneer BD-spinner, alongside a Denon AVC A11SR amp and a surround sound system comprising a 7.1 Celestion array and an additional REL Quake sub. Lighting is handled by a Futronix P50 switch.

In the living room I've got a Pioneer PDP 503HDE plasma, KEF XQ front and centre speakers, Sony and Pioneer multiregion DVD players, an Echostar AD-300 IP foreign satellite system and an Arcam CD72 CD player and A85 amp.

How much do you think you've spent on your AV habit?

About £37,000.

What do your family and friends make of your hobby?

My wife-to-be is pretty cool. Although when I first moved into her one-bed house around 10 years ago, she went away for the weekend and when she came back she found a 36in Panasonic CRT TV in her very tiny lounge. In my eyes it was fantastic, but in her eyes it took up the complete room, to the point of not being able to get up the stairs very well! It's still a talking point with my mates now...

What's your current favourite DVD or Blu-ray?

I've been watching a lot of old films lately, so probably *A Fistful of Dollars*.

Are you excited by HD?

Until I brought the projector and

Blu-ray player, I just didn't realise how much better the picture quality is on Blu-ray. All we now need is for the films to be cheaper.

Sometimes I think the more you get into home cinema the more you can get caught up in analysing picture and sound quality and forgetting that what really matters is just watching films! ●

Join the club

Do you want to see your home cinema system featured in the pages of *Home Cinema Choice*? If so, just email your contact info and some large, hi-res photos of your setup, and one of yourself, to hcc@futurenet.co.uk with AV-holic as the subject.

Room essentials

A Time to retire

This 50in Pioneer plasma is soon to be replaced by a 55in LCD

B Three's enough

In the living room, our AV-holic gets by with only 3.0 audio, but these sizeable KEF speakers aren't shrinking violets

C In control

Logitech's Harmony remote is used for simplified control of the multiple components

D Toy story

Another HCC reader with a passion for movie collectables – we particularly love the diddy Captain America

E Bigscreen beaut

The six-foot 16:9 screen, from US brand Draper, handles the images from a JVC HD projector

F Out of sight

The cinema room's source equipment is tucked away in the cabinet to help maintain the sleek appearance



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REVIEWS

→ **Hardware highlights** DENON Feature-packed AVR debuts Audyssey DSX
 VIVITEK World's first LED home cinema projector SONY 46in Z Series LCD favours CCFL over LED
 HARMAN KARDON Mid-range Blu-ray deck TOSHIBA Entry-level 37in Resolution+ LCD TV
 PVR GROUP TEST Four rival recorders go head-2-head **AND MORE!**

Big red ones

Boston Acoustics wages war on high-end 5.1 speaker packages with its striking new VS Series system. Turn to p70 for our expert opinion



HCC Ratings key

| | |
|---------------|-----------|
| Outstanding | 1 2 3 4 5 |
| Above average | 1 2 3 4 5 |
| Acceptable | 1 2 3 4 5 |
| Disappointing | 1 2 3 4 5 |
| Dire | 1 2 3 4 5 |

HCC DOESN'T BELIEVE IN OVER-PRAISING HARDWARE. CONSEQUENTLY, A THREE-STAR RATING SHOULDN'T BE CONSIDERED A BAD RESULT, IT SIMPLY MEANS THAT A PRODUCT PERFORMS ACCORDING TO ITS CATEGORY POSITION. A FIVE-STAR RATING IS ONLY AWARDED IN EXCEPTIONAL CIRCUMSTANCES

It may look like just another AVR, but as **Richard Stevenson** enthuses, Denon's 4310 is also the first to model Audyssey's Dynamic Sound eXpansion

What-ho, it's yet another incarnation of Denon's 4300 series networked multichannel receiver. Like many of these annual AVRs, you may not notice much of a difference straightaway. The name has changed, but the face is the same. However, in this case that's no bad thing as the AVR-4308 was a cracker.

In fact, other than looking like two peas in a pod (er, black square peas...) there are a number of quite important changes going on beneath that menacing-looking hood. Denon Link 4th Edition makes its first commercial appearance for better audio link-up with other Denon source products, there is a new Clock Jitter Reducer to improve audio from any HDMI or digital audio input, and you get all new High-Bit i/p scaling for all those ancient analogue video sources you are still hanging on to.

But let's cut right to the chase here – the big news is the world's first implementation of Audyssey's Dynamic Sound eXpansion processing, otherwise known as Audyssey DSX (see interview p52 for more). Forget those rear-back speakers driven by channels six and seven. Implement DSX and enjoy a wider or higher front soundstage with additional speakers up front instead.

If the Audyssey way doesn't float your boat, then the AVR-4310 also offers Dolby's latest Pro-Logic IIz – likewise featuring height-channels as opposed to rear-backs. Not only are both touted as better-sounding than a standard 7.1 set-up, for all those AV aficionados with a doorway, window or opening behind the sofa negating rear-back speakers, this is big news.

Get into the familiar and rather slick Denon GUI and there are a few nice new touches here, too. Most

Front-heavy hero





→ Specifications

Dolby Digital TrueHD: YES
DTS-HD Master Audio: YES
THX: NO

Multichannel audio: YES 7 x 130W

Multichannel input: YES 7.1 phono

Multiroom: YES Zone 2 (A/V), Zone 3 (audio only)

AV inputs: YES 7 x S-video & composite; 6 x digital audio (3 x coaxial, 6 x optical)

HDMI input/output: YES 6-in, 2-out

Video upscaling: YES to 1080p

Component: YES 3-in, 1-out

Dimensions: 434(w) x 171(h) x 441(d)mm

Weight: 15.8kg

Features: Audyssey MultiEQ RoomEQ; 2 x USB ports; Ethernet; AM/FM tuner; Audyssey DSX processing; Dolby Pro-Logic IIz processing; Denon Link 4th Edition; Clock Jitter Reducer for all HDMI and digital audio inputs; High-Bit i/p scaler; Direct USB connectivity for iPod; Napster service support; new 32-bit DSP engine; vTuner server access; GUI over video function; PC set-up via web/Ethernet; remote installer access



History of surround sound

The evolution of cinema audio – from one channel all the way up to 24

1.0 (aka Mono)

Back in the day, 1877 to be precise, Thomas Edison scratched the first commercial music recording onto a wax cylinder. When played back with a reading stylus, the music was reproduced and amplified through a single brass horn.

2.0 (aka Stereo)

By the 1930s, EMI produced the first stereo gramophone records. An awful lot of hi-fi enthusiasts still haven't moved on since. Thankfully, Bell Labs in the US demonstrated a stereo film soundtrack in 1937 and by 1940 we had Disney's *Fantasia* – the first commercially shown film with a stereo sound mix.

3.0 (aka Dolby Surround)

Back at home, our films were first delivered in mono and then Nicam stereo over broadcast TV until Dolby invented Dolby Surround in the early 1980s. First appearing on Betamax and VHS video tapes, single rear-channel information was matrix-encoded into an analogue stereo soundtrack.

4.0 (aka Quadraphonic and Dolby Pro-Logic)

In the 1970s, the more forward-thinking members of the hi-fi fraternity invented quadraphonic sound using a speaker in each corner of the room. It was a flop, as the rest of the hi-fi clan were still bemoaning the demise of mono. By 1987, Dolby came to the rescue of video fans with Dolby Pro-Logic, a system that embedded surround and centre channel information in an analogue two-channel soundtrack. Home cinema was born.

5.1 analogue (aka Dolby Pro-Logic II, CircleSurround)

As the 1990s dawned, Dolby, and a bunch of companies that frankly trailed in its wake, created analogue matrix systems that also filtered out 'stereo' surround information and a bandwidth-limited sub-bass channel – hence the '.1'.

5.1 digital (aka Dolby Digital, DTS, SDDS)

Audio Code 3 (AC-3), which later became known as Dolby Digital, was the first truly discrete 5.1 channel format. It was recorded first onto LaserDisc and later DVD. However, to fit all those channels of information in limited disc space, each channel was compressed much like an MP3 file. DTS followed shortly after with a lower compression system and, arguably, better sound.

6.1 (aka Dolby Pro-Logic IIx, DTS-ES)

To create a more immersive surround sound effect a centre rear channel was added to ProLogic by Dolby as Pro-Logic IIx – albeit an analogue matrix format. DTS jumped ahead with a true 6.1 discrete system with single rear back channel, DTS-ES discrete.

7.1 (aka Dolby Digital EX)

Not to be outdone, Dolby added a pair of rear back channels to Dolby Digital EX making it 7.1-channel. However the 'stereo' information for rear back is matrix filtered out of a single rear-back channel recording.

7.1 uncompressed (aka 7.1 LPCM, Dolby TrueHD, DTS-HD)

The arrival of Blu-ray discs gave us enough data space for eight discrete channels of uncompressed PCM audio (24-bit/96kHz), or even higher quality. Dolby TrueHD and DTS-HD Master Audio were born.

7.1 alternatives (aka Dolby TrueHD + DPL IIz, Audyssey DSX 7.1)

A bunch of boffins at Dolby and Audyssey decided that front 'height' channels are better than rear-back channels and moved the goal posts – well, your speakers, from rear-back to high front. Audyssey DSX allows for Width channels as an alternative.

9.1, 11.1, 10.2 and 22.2 – no, really.

Audyssey DSX is scalable for Height and Width (9.1) or Height, Width and rear-back channels (11.1). Dolby's Pro-Logic IIz can be used to matrix Height information out of DD EX for 9.1 sound. THX has already developed 10.2 using five front speakers, five surround speakers and twin subs. At this year's NAB show, 22.2 channel sound was purported to be the format to accompany Ultra High Definition Video. It uses twin subs plus three layers of speakers – a main middle layer of 10 speakers, a top 'height' layer of nine and lower layer of three speakers, for a truly 360-degree surround sound experience.



helpful is a new subwoofer level matching routine that engages before the main speaker-by-speaker calibration. Having bitched regularly about the length of time Denon set-up takes, only to find your sub is set too high and you have to start all over again, this gets a real vote of thanks from me. You get to choose standard 7.1, 5.1 plus Width speakers, or 5.1 plus Height speakers. The rest of the Audyssey auto set-up is standard fare. Interestingly, the final calculation seems to take a whole lot longer than on previous models – presumably due to do all the number crunching for Audyssey DSX.

Power house

There is plenty of power (130W, claimed) to all channels, of course, plus a comprehensive gamut of HD audio processing and a refreshed, if not radically new, pair of remote controls. I could go on about the ease of network set-up, USB iPod access, the vTuner web-radio server and even the new feature for direct access to your Napster account, but

AV/CV

Product: Denon's latest 43xx series bristling with electronic trickery

Position: The current king of Denon's AVR range

Peers: Yamaha DSP-Z7; Pioneer SC-LX81; Marantz SR-8002



all that is just icing on a really rather fine cake.

The sound of the AVR-4310, straight out of the crate, is great. Not just okay or good in parts, but *bona fide* great. There's some guy in Japan responsible for tuning Denon's receivers of late, and he has got all the audio desires nailed. Put on any action movie (*Iron Man* was to hand... again), and the sound is huge, potent and powerful with stupendous bass.

Yet at the same time the 4310 can be as agile and subtle as a really good stereo hi-fi amplifier. Having only just disconnected Yamaha's similarly-priced DSP Z7, the Denon kicks it up the speaker terminals in quite a few areas of auditory delight. Perhaps if I wanted a little more simplicity in the set-up, a few less tweaks and tricks and perhaps a little more grunt over refinement, I would have a peek at the Z7... then quickly run back to the AVR-4310 to revel in its dynamic dexterity and detailing.

And then there is its Dolby Pro-Logic IIz and Audyssey DSX trickery. Well, Dolby Pro-Logic IIz is an

absolute triumph – but not for its use with two-channel matrix sources. The format's real magic is processing height channel information out of all Dolby and DTS formats – even those of an HD persuasion. And, wow, what a difference. Tony Stark's quickfire dialogue in Dolby TrueHD is immediately lifted up into the centre of the screen and the whole front soundstage gains a mass of solidity and scale. As he burst out of his captors' cave in the original *Iron Man* armour, the entire front of the room exploded with three-dimensional sound like I've never heard before. Put it this way, **once you have tried TrueHD or DTS HD with added IIz Height, rear-back channels will be a thing of the past.**

Casting my mind back to Yamaha's DSP amplifiers with their added 'presence' height channels, the difference is a world apart. These modes have always seemed to induce a faint layer of hash and vaguely phasey edge to the front soundstage, and I confess I expected >

Phwoar:

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Backside story

A Fistful of HDMI

Five inputs should cover all your AV needs – there's one on the front panel, too

B Buff up your iPod

A direct digital USB link allows the audio processing in the AVR-4310 to enhance the sound quality from an iPod

C Get connected

Composite AV connections sit alongside that other analogue favourite, S-video

D Power of two

If you power up your subwoofer from here, it will switch off with the 4310, rather than remaining in standby

E Binding agreement

You won't find any cheap spring-clip versions here to hook up your surround speakers

F Get in the zone

The Denon's Zone 2 output supports full audio and video. A third zone supports audio only

Pushing the sound envelope

HCC speaks to **Chris Kyriakakis**, Founder and Chief Technical Officer at Audyssey Laboratories, about the company's latest extended surround sound format Audyssey DSX – Dynamic Surround eXpansion

Audyssey DSX only came about after extensive acoustic analysis. This research concluded that rear-back channels are not best placed to increase surround sound immersion and involvement if you are 'limited' to 7 or 9 channels.

DSX is a scalable format currently made up of 7.1 to 11.1 channels. The first step in converting your set up to DSX is adding width channels to the front of a standard 5.1 set-up. If this is impractical – the speakers will after all be wider than the current L/R main channels – DSX can process Height channels instead – for speakers placed above and behind the front mains. In an ideal world, an amplifier with nine-channels would allow DSX 9.1 by adding Width and Height channels to a standard 5.1 set-up. (See diagram).

For the truly speaker-crazed, DSX can also process four rear back channels giving you an 11.1 set-up with a suitable 11-channel AV amp or processor.

HCC: Audyssey DSX – what is the performance advantage over a standard 5.1/7.1 surround sound?

Chris Kyriakakis: 5.1 systems are good at providing accurate localization in the front, and reasonably enveloping ambience behind the listener, but they are not very good at fully enveloping the listener and often leave gaps at the sides. Furthermore, it is impossible to seamlessly pan a sound from, say, front right to right surround with current 5.1 or even 7.1 systems because the cues we use for perceiving left/right panning and imaging fall apart when we turn our head 90° to a pair of speakers. DSX was designed to

address these issues and provide the necessary acoustical and perceptual cues that we need to perceive a wider and more enveloping soundstage.

HCC: Why use so many speakers at the front?

CK: The reasons for this come from studies of human perception. Human hearing has much higher spatial resolution in the front hemisphere than it does in the rear. So, if you only have a fixed number of channels it is better to use them where they will have the most impact: in the front and front sides. Unfortunately, the industry moved in the wrong direction when back surround channels were added. Research has shown that rear-back is the least significant place to add information if the goal is to increase the sense of envelopment.

HCC: Are you speaking to manufacturers about 9-channel AV amplifiers for DSX 9.1?

CK: Yes. There will be 9.1 channel models coming out in the coming months – but we cannot disclose which manufacturers might be implementing this at present.

HCC: What about DSX 11.1 to enlist 9.1 with rear-back channels as well?

CK: Back surrounds are part of DSX. This is a scalable system that reconfigures its processing as more channels are added. Of course, there are practical limits and so we also offer recommendations as to where to start adding channels in order to have the most impact. Wide channels should be added first as they provide the biggest and most noticeable improvement.

Height channels are second, followed by back surrounds. The DSX algorithm also includes a component called Surround Envelopment Processing that improves the blending of the standard and back surround channels with the front channels. This accounts for the frequency response differences caused by the fact that our pinna (the shell-like part of the ears) point forward.

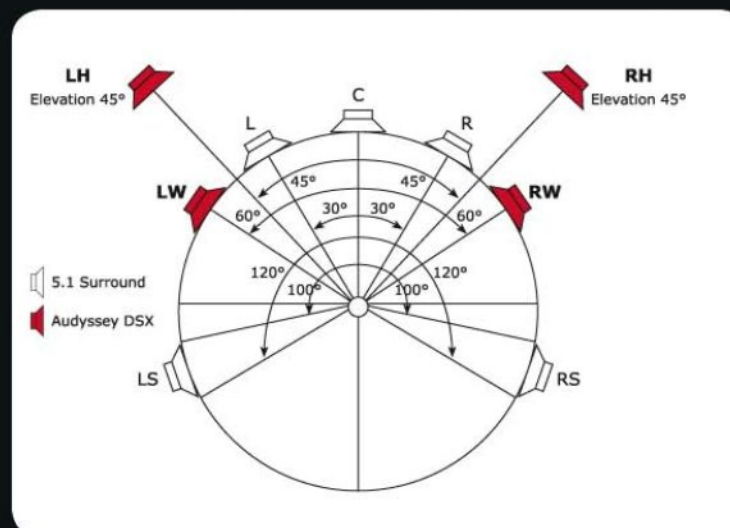
HCC: Are we likely to see DSX in commercial/digital cinemas?

CK: My colleague at the University of Southern California, and Audyssey co-Founder, Tomlinson Holman has been researching "beyond 5.1" systems for nearly 10 years. There are currently some theatres that have experimental installations for evaluation. As with many new technologies, what will really drive this in cinemas is innovative content that takes advantage of the new channels. We hope to see this happen in the near future.



Kyriakakis designs speakers that go up to 11

If your home cinema has the room, DSX 9.1 covers all the angles



→ Tech Labs



All your speakers need to take instructions from somewhere. This is the motherlode

DSX You say...

Steve Edwards:

It took long enough to get permission for 5.1 speakers in the lounge – never mind 7.1! Adding more wouldn't get past the first hurdle

KDP99:

Might add the extra speakers, but would not want to dump my amp, so an add on DPiiz decoder with power amps for the new channels might work

Howard:

5.1 is just fine, thanks! I have no interest whatsoever in adding more speakers

Bob:

I opted for a 5.1 set-up as the room has to double up as a civilised place. I wouldn't want that many speakers as most of the time they wouldn't be driven

William Fazo:

I always turn off these fancy mic setup processors. My kit has the new Audyssey EQ stuff and I turned it off and tuned the amp with my ears

exactly the same from Dolby's version. By comparison, Ilz Height, when added to DD and DTS sound, is rock-solid, precisely-focused and builds beautifully on the whole front-of-stage atmosphere. Through actions, dramas, animated movies and even my growing collection of multichannel BD music discs, I preferred the added Ilz height to rear-back channels every single time.

This also goes a long way to justify Audyssey's reasoning behind DSX, suggesting that added channels at the front are a whole lot better for the immersive effect of a film than more at the rear. And Audyssey DSX Height mode is every bit as clean and refined as Dolby Ilz Height, and you can adjust the height effect in 10 per cent increments. I settled for the absolute mid-way setting, which offered the best compromise between the additional soundstage height and the front end becoming a little dislocated. But just like Ilz Height, when DSX Height is added to TrueHD or DTS-HD soundtracks, the effect is uniformly positive and better overall than a standard configuration 7.1 channel set-up. Now that's already two revelations in one review.

Swapping speakers to re-configure for Audyssey DSX Width mode is an unfortunate faff. It involves a complete re-set of the receiver from scratch, including re-measuring all the seating positions. And you can't store multiple configurations – so if you want to go back to Height set-up afterwards – it's another re-set job.

Audyssey DSX Width is just as impressive as DSX Height – albeit in a completely different way (well, dimension). Imagine moving your main speakers out about ten feet in either direction, which if your room is

anything like mine would be in the garden, and then filling the void between those and the centre speaker with more main L/R sound. Having already had my flabber well and truly gasted by Ilz and DSX Height, the DSX Width is another revelation. That's three in a day – too much for a man of my age.

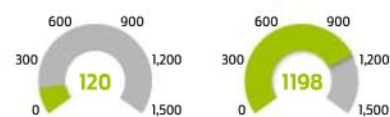
Throughout *Iron Man* the whole front end soundstage is wider and more enveloping, but never spreads so far that it upsets the critical front end focus. Dialogue remains centre-centre but seems better-projected with more body, and the sheer number of speakers up front adds a greater sense of scale and dynamic impact. This just begs for even more gratuitous use of the volume knob and the Denon rises to the challenge without even a flinch.

Can't get what you want

But for all the flag waving and tooting trumpets, there's one huge snag: I don't want either Ilz Height/DSX Height or DSX Width – I want *both* at the same time. Okay, the AVR-4310 clearly has no power amp modules left for nine-channel sound but a simple line-level output would have let you add an extra stereo power amplifier for the full DSX 9.1 experience. Ultimately, I would choose Dolby Ilz Height with Audyssey DSX Width and rear-back channels as well. But I'm greedy.

The AVR-4310 is the best sub £2k home cinema receiver on the market and, if more than seven speakers in the lounge is impractical or outlawed *chez vous*, it's a no-brainer. But should those of us with spare speakers and tolerant partners wait? Perhaps until next year, when I am guessing that the AVR-4311 might have nine channels to elicit the full-fat Audyssey DSX experience ●

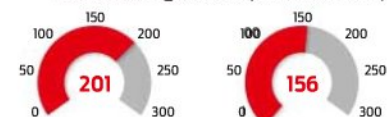
Power consumption: Watts



Idling: With an amp this powerful it's no surprise that even at rest it eats up the electricity

Powered: In five-channel mode, power consumption reflects this receiver's excellent output per channel

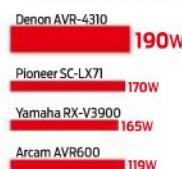
Power ratings: Watts (8Ω, 0.5% THD)



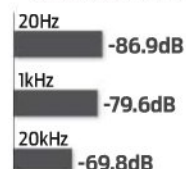
2-channel 8Ω: Stereo performance is well above the claimed 130W-per-channel for 8Ω (170W for 6Ω)

5-channel 8Ω: Again, well above the claimed performance, either for rated or dynamic power

Untainted: Watts



Signal/noise: dB



Fidelity firewall:

Our measure of output power before low levels of distortion (0.05% THD) kick-in. This excellent figure suggest you can run this amp at high levels with no risk of distortion

S/N tests:

Tests suggest excellent signal-to-noise performance in low to mid bands, with very good performance at higher frequencies



HCC VERDICT

Denon AVR-4310
£1,900 Approx

Price check: www.techradar.com/623954

Highs: Awesome sound as standard – DPL Ilz and DSX make it more awesome; packed with features

Lows: No storable configuration modes; no 9.1 output misses the full DSX trick

Performance: 1 2 3 4 5

Design: 1 2 3 4 5

Features: 1 2 3 4 5

Overall: 1 2 3 4 5

DLP LED invasion

Vivitek's H9080FD is the world's first home cinema PJ using LEDs. **Rik Henderson** visits the cutting edge



Bear with me as I share a dream I had the other night. The world was under threat by millions and millions of tiny sentient lights. They started to appear on everything: TVs, toasters, pavements, jam jars, Richard Stilgo... Basically, everything.

They didn't technically pose a threat, but they shone in peoples' retinas all the time, so were quite distracting. And they made everything look like the backdrop of *Stars in their Eyes*. Naturally, after much talk of negotiation with the creatures and possible acceptance into global society, we destroyed them. With bombs.

There's two things to make of this. Firstly, I really need to stop eating chorizo sausage that's past its Best Before date. And, secondly, it's not too far from the truth...

Lamp-free

Small, light-emitting diodes are taking over the AV world. Many LCD TVs are already employing LEDs as replacements to conventional CCFL backlights, and now the projection industry has followed suit, albeit in a different fashion.

Vivitek is the first manufacturer to release a lamp-free home cinema projector in the guise of the H9080FD – a feat made possible with the adoption of Luminus Devices' PhlatLight technology – and it won't be the last. The unit utilises a module containing different-coloured LEDs (R, G and B) housed on individual chips to provide the light source. The resulting beam is then fed through Texas Instruments'

1080p DMD chip to project images. Simple stuff really, but incredibly clever in practice.

It's a system that yields several benefits. Unlike traditional single-chip DLP projectors, there's no call for a colourwheel, so images do not suffer (however slight) with DLP's colour-fringing rainbow effect.

LEDs also have an incredibly lengthy half-life. It's claimed that the PhlatLight engine will still be going strong up to 20,000 hours from purchase. That's 18-20 years if you watch one film a night, every single night of the week. Impressive. In all likelihood, you'll never need to replace the light source during the life of the unit. This makes LED tech particularly appealing for users in the corporate or educational markets. Compare that to the bulb in a JVC DLA-HD750, for example, which has a claimed 2,000 hour lamp life. By the same criteria, that'll last just under two years, and a replacement costs around £250. So, to get the same longevity, you'll need to spend around an extra £2,500 for a normal home cinema projector.

There is, however, a downside to this fledgling technology. Currently, **LEDs are like the trendy kid in class; they're popular, colourful, but none too bright.** And so, this projector does have a Lumens deficiency compared to its rivals. In fact, in normal ambience (room lights switched on, for instance) you can't really see anything from ten feet away. The H9080FD is not a projector for anything less than a fully light-

AV/CV

Product:

The first commercially available DLP LED home theatre projector

Position:

The very top of Vivitek's range

Peers:

JVC DLA-HD750; SIM2 C3X Lite

→ Specifications

HD Ready: YES up to 1080p24

Component video: YES 1 x input

HDMI: YES 2 x v1.3a HDMI

PC input: YES 1 x VGA

Resolution: 1920 x 1080

Brightness (claimed): 800 ANSI

Lumens

Contrast ratio (claimed): 100,000:1

Dimensions: 520(w) x 224(h) x

548(d)mm

Weight: 16.6kg

Other features: PhlatLight PT-120 light source; 20,000 hours LED life; manual zoom; manual focus; 2 x 12V triggers; lens shift (vertical +/- 10%, horizontal +/- 30%); projection screen size: 22.5in – 300in; Gennum 9450 video processing; 25dB claimed fan noise



Vivitek hopes LED technology will catch on in projection as it has with LCD TVs



Thinking ahead: The inputs are labelled upside down so you can still see what you're doing when the projector is ceiling-mounted

controlled room, and, unless you're happy to watch *EastEnders* in a blacked-out environment, it's not particularly designed for casual use. Nope, this is a good, old-fashioned, honest-to-garden home cinema projector and, in that sense, it is more than fit for purpose.

Also hidden within its chunky build is the same Gennum 9450 video processor found in the Planar PD8150, we loved back in *HCC* #158. **One of the more interesting features of this chipset is the option to manually change the refresh rate** – seemingly without adding unnecessary artefacts. To be honest, you'll probably never stray far from the 'Auto' frame rate mode, which matches the incoming signal, but tweekers and purists will be glad of its inclusion.

More important though, is this specific processor's scaling and de-interlacing prowess. It does such a good job with upscaling standard-definition video that I advise you turn off any equivalent processing in the source. It doesn't make SD content look as good as HD images – that's a fallacy perpetuated by Looney Toons – but it holds up very nicely indeed, even when blown up above 100ins. Edge enhancement succeeds in this instance where it often fails in others, and the pictures retain a filmic quality even with noise reduction switched on.

High-definition video is staggeringly detailed on the H9080FD, and 24 frame footage moves like a female ice dancer. Indeed, I would argue that the pictures are worse at 90 per cent of cinema multiplexes. There's also proof positive that an LED lighting system enhances colour saturation,

especially when combined with TI's DLP Brilliant Color system. The reds are simply breathtaking, even on the picture presets. Of course, you can also calibrate to your heart's desire with an exhaustive set of tools.

I'm less enamoured by the contrast level, which is mainly dampened by the lack of true brightness. That said, black levels are good and the dynamic iris does a fair job without being too overt – it's neither too loud or too crazy in its lightening and darkening of scenes, so you'll probably opt to keep it on.

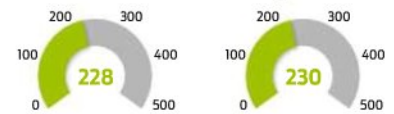
My other quibble concerns the LED driver. Although the model makes a virtue of the whisper-quiet fans it utilises, there was still a faint buzzing sound on our review sample. This changes in pitch during certain sequences as the driver needs to increase the voltage depending on the brightness required. It transpires that this is an inherent issue with the technology itself and is not unique to this specific projector. And Vivitek has greatly lessened the effect by adding acoustic foam internally.

Tech trendsetter

So neither of its flaws are insurmountable, and its many unique properties make the H9080FD an interesting proposition. Unfortunately though, many may be put off by the cost to even give it an audition. As with any new-fangled technological breakthrough, there's a premium attached, and ten grand may seem too much, regardless of its tasty light engine and superb longevity. It's hard to argue otherwise too, especially considering most rivals are roughly half the price. However, there's something exclusive about being a trendsetter ●

→ Tech Labs

Power consumption: Watts



White screen: When fed a pure white 100IRE screen, power consumption is average, nothing to get overheated about

Powered: There's little increase in consumption for live footage, but the Dynamic Iris mode can cut usage by up to 10W

Contrast: ratio



Picture: With Dynamic Iris off, contrast ratio is a reasonable 2,257:1 – switch it on and it increases to 9,536:1. With DI on 'Infinity' we measured 29,009:1, with a luminance of 17,963fL

Colour temp: Kelvin



Presets: Colour temperature presets are a bit all over the place, but manual R/G/B adjustment renders a perfect result
Standard: 5,116K
Cooler: 6,893K
Cooler: 8,472K
Warm: 5,135K



HCC VERDICT

Vivitek H9080FD
£10,000 Approx

Price check: www.techradar.com/620783

Highs: Excellent colour fidelity; great definition; long lifespan
Lows: Not particularly bright; not going to win any beauty pageants

Performance: 1 2 3 4 5

Design: 1 2 3 4 5

Features: 1 2 3 4 5

Overall: 1 2 3 4 5

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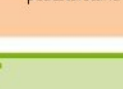


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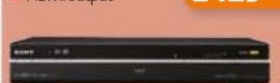
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→ Specifications

HD ready: YES up to 1080p24

HDMI: YES 4 x HDMI v1.3a

Component: YES 1 x set with progressive scan

PC input: YES 1 x VGA

Resolution: 1920 x 1080

Brightness (claimed): N/A

Contrast ratio (claimed): 100,000:1 (native); 2,000,000:1 (dynamic)

Dimensions: 1,091(w) x 672(h) x 86(d)mm

Weight: 21.9kg

Features: LAN port; Motionflow 200Hz; BRAVIA Engine 3; Live Colour Creation; 10-Bit panel; DLNA connectivity; AppliCast net connectivity; USB media player; BRAVIA Sync (HDMI CEC); S Force Front Surround audio (10W + 10W); Picture Frame Mode



Sony's Z-series 46in LCD uses traditional CCFL backlighting to great effect



CCFL superhero

Although LED backlighting seems to be the future for LCD TVs, Sony is eking out the very best from traditional technology. So says **Rik Henderson...**



It's no secret that Sony hasn't had an easy time in the highly competitive TV market of late. Despite its eminently recognisable logo and a brand status that's comparable to the likes of Nike, Coca Cola and Lego, it's struggled to compete with more affordable rivals. In truth, the brand's TV vision seemed a little blurred for a while, but 2009 has signalled a renaissance. And the 46Z5500 keeps the forward momentum going.

In fact, it's exceptional. And brave. For starters, it doesn't have an LED backlight, which, for a two-grand telly, strikes me as rather courageous. Instead, Sony has put its faith in CCFL. And while that is to the slight detriment of black levels (which are extremely good regardless, helped by a real world contrast ratio of over 60,000:1), it is a move that has seemingly allowed the boffins to concentrate on detail reproduction and colour saturation.

Both of these picture elements are extraordinary. The colourfield is natural and, just, right. There's also a solidity in static image representation (as evidenced while viewing HCC's Test Card) that even Samsung's LED panels can't match. But it is with fine detail that the Z5500 really sings. Blu-ray should be a natural bedfellow to a Sony TV, and in this instance, it is. The US Director's Cut edition of *Watchmen* is a dark experience (physically and tonally), but the screen picks out every minute speck of information from the shadows. If it didn't look too weird to do so, I could've applauded its video prowess openly in the office.

That's not to say there aren't caveats. I'm not overly enamoured by the design of the bezel. There's a

silver strip that ranges along the bottom of the glass, which reflects ambient light – it's distracting. Also, off-axis viewing relegates image-quality rapidly the further around, above or below you get. If your child is watching *Thomas the Tank Engine* while sat on the floor gazing up, he'd be hard-pushed to recognise the individual trains from the greyness of their livery.

There's also a minor issue with reds, which can look a little orangey. But I am being rather picky. None of these gripes are pronounced enough to spoil proceedings.

One-man show

The 46Z5500 is a multi-talented performer with both hi-def and standard-def content and that's all that matters. I'd actually go as far to say that it offers one of the best digital TV (Freeview) experiences I've actually seen on a TV above 37in this year. And, while not especially loud, the audio it creates is meaty enough. When it comes down to it, for generic television viewing it's almost flawless. And, while I'm not really a fan of the weird artefacts that frame rate doubling (quadrupling, here) can often introduce to a movie, **Sony's own proprietary, motion-smoothing 200Hz processor gives as natural an experience as can be.**

Clearly, I'm a fan of this TV. It does the basics right. As with most screens these days, there are bells and whistles – such as AppliCast, Sony's web access features, and DLNA certification – but they're largely irrelevant. Instead, it's good, old-fashioned performance that's won me round. And it's certainly worthy of the Sony legend.

AV/CV

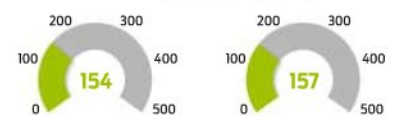
Product: 46in LCD TV with 200Hz picture processing

Position: The Z Series is near the top of Sony's TV range; a 52in version is also available

Peers: Samsung UE46B8000; LG 47LH5000

→ Tech Labs

Power consumption: Watts



White screen: Though power consumption is fairly hefty, using the Eco mode and light sensor in a dim setting cuts it to 86W

Test footage: Only very slightly raised test footage power consumption hints at the relatively low power of the audio system

Contrast: ratio



Picture: Contrast is excellent, with a decent luminance level of 58.15f. As long as the brightness isn't hiked up too high, the backlight is pleasingly even

Colour temp: Kelvin



Presets: A wide range of colour temperature presets, with Warm the best option; manual adjustment of RGB gain and bias delivers perfect results
Neutral: 8,599K
Warm 1: 7,633K
Warm 2: 6,348K
Cool: 10,661K

HCC VERDICT

Sony KDL-46Z5500
£1,900 Approx

Price check: www.techradar.com/622541

Highs: Wonderfully detailed pictures; bright, crisp colours

Lows: Black levels are a tad light; poor off-axis viewing

Performance: 1 2 3 4 5

Design: 1 2 3 4 5

Features: 1 2 3 4 5

Overall: 1 2 3 4 5



“.....without considerable knowledge or experience, high quality home cinema is not a suitable DIY activity”

LOOKING FOR A HOME

How easy is it to buy a home cinema system that suits you? You could read the magazine product reviews, find out who sells the recommendations, five-star favourites or best buys at the cheapest price and place your order. When the system is delivered to your door in the box, you get a friend who knows his onions to install it - and live happily ever after.

This is a fairly well-trodden path but it leads to dissatisfaction and a lot of wasted money. Besides there being a bewildering choice of components on the market today, there are also different ways in which components can be installed and connected together. Which sort of visual system do you go for? Projector and screen, plasma or LCD, an HD ready set or one with full 1080p capability? And on the audio side do you plump for a 5.1 or 7.1 speaker system, passive or active sub, and where do you site them for the best results? The choice of home cinema amp raises even more questions. Will you be listening to music through the same system? If so, you need an amp that approaches the performance of a decent 2-channel hi-fi amp, which is not that easy to find. Do you need SACD, DVD-Audio, or Blu-ray capability? How many inputs do you need for video, s-video, component, coaxial digital, optical digital and HDMI? The above are just a small percentage of the decisions that must be made. In short, it's complicated and very fertile ground for getting it wrong.

Achieving potential

To select a system, you could choose a collection of 'Best Buy' components in the hope that they will be a great combination. Maybe, but probably not. You could buy a pre-packaged all-in-one system from one manufacturer. This is almost certainly not the best route either as you will miss out on enormous potential. From informal surveys conducted, it appears highly likely that the majority of home cinema systems selected and installed on a DIY basis, that is without professional input, are performing at way below their optimum level. To compound matters, most are also ill-matched to the room in which they are installed and are, in reality, the wrong system. Without considerable knowledge or experience, high quality home cinema is not a suitable DIY activity.

Our aim must be to buy a home cinema system that will provide an excellent picture quality plus an audio delivery that will match, or even better, the commercial cinema experience. It must be exciting, reliable and deliver true value for money.

What and Where to buy

To ensure a home cinema system is right for you, where do you start? Here's an important tip ... **don't** start with **WHAT**, start with **WHERE**. There's only one way to give yourself the best chance of getting it right first time, and that's through a specialist AV dealer. It's possible you have preconceived ideas that put you off visiting one. Although you would welcome the advice and guidance, you don't know the technical jargon. You don't want to be talked down to. Your friend has said they only sell expensive gear and they're not interested if you don't have a big budget. They're expensive. These are just myths.

Most specialist AV dealers are running their business because, above all, home cinema is their hobby. They spend a large portion of their time comparing systems to get the best possible results. They know the component combinations which don't gel together and, conversely, they know the combinations which give the best performance within a given price range. Very importantly, they know how to get a system working to its optimum. But they all also know the system must suit **you**.





Listed on this page are 20 of the best AV shops in the country. They have been selected because they are known to do an excellent job in guiding customers towards home cinema systems that will provide years of superlative performance and total satisfaction.

STAR QUALITIES

VALUE FOR MONEY.....★★★★★
 SERVICE.....★★★★★
 FACILITIES.....★★★★★
 VERDICT★★★★★

CINEMA SYSTEM?...

...ask the experts

Buying or being sold to?

There are dealers around, web based or otherwise, who will sell you anything you are willing to pay for. They may be a bit cheaper but that's all they offer. Now there's a group of long-established specialist dealers who are totally committed to putting the customer first. Their idea of 'selling' is to discuss your requirements, offer their advice, give you the best options, then play the systems for you and allow you to be the judge. You'll probably be surprised and, almost certainly, relieved to discover how easy it is to see and hear the differences between components and between systems. You'll be able to make a clear and informed decision about what to buy.

The story doesn't end there. These shops won't abandon you once you've put your hand in your pocket. They won't leave you to set up the system you've selected as best you can. They'll install it in your home, make sure it performs to its best, and ensure you're entirely happy with the way it works. Why? Because a high proportion of these dealers' custom comes through people who have bought from them before, either directly or by recommendation. It's vital to them to get it right for you.

Getting the best deal

Unless you've got money to burn, you'll be living with your new system for years. Most of these dealers offer much longer equipment guarantees than provided by the manufacturer, a very worthwhile benefit, but it also makes it in the dealer's interest to ensure high build quality and reliability. Maybe you could save a few pounds by buying piecemeal but you'll lose out on the overall package. As far as the dealers are concerned, they believe that taking care of their customers properly is a nicer way of doing business than just handing over boxes.

OUR TOP 20 UK SPECIALIST AV DEALERS

SOUTH

Ashford, Kent **SOUNDCRAFT HI-FI**

40 High Street.

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Chelmsford **RAYLEIGH HI-FI**

216 Moulsham Street.

01245 265245

Colchester **RAYLEIGH HI-FI**

33 Sir Isaac's Walk.

01206 577682

Kingston-upon-Thames **INFIDELITY**

9 High Street, Hampton Wick.

020 8943 3530

Rayleigh, Essex **RAYLEIGH HI-FI**

44a High Street.

01268 779762

Custom Install Dept.

01268 776932

Southend-on-Sea **RAYLEIGH HI-FI**

132/4 London Road.

01702 435255

Tunbridge Wells **KENT HOME CINEMA**

69 London Road, Southborough.

01892 535007

Worthing **PHASE 3 HI-FI**

213-217 Tarring Road.

01903 245577

LONDON

N1 **GRAHAMS HI-FI**

190a New North Road.

020 7226 5500

SW11 **ORANGES & LEMONS**

61-63 Webbs Road, Battersea.

020 7924 2040

SOUTH WEST

Exeter **GULLIFORD**

97 Sidwell Street.

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0115 9584404

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93-95 Hobs Moat Road.

0121 742 0254

NORTH

Chester **ACOUSTICA**

17 Hoole Road.

01244 344227

York **SOUND ORGANISATION**

2 Gillygate.

01904 627108

SCOTLAND

Edinburgh **LOUD & CLEAR**

Bonnington Mill, 72 Newhaven Rd.

0131 555 3963



The majority of the above dealers are members of one or both of the major trade organisations, BADA or CEDIA.



The inbetweener

Richard Stevenson wonders whether Harman Kardon's BD deck does enough to justify its mid-range positioning

Harman Kardon's debut Blu-ray player appears to tick most of the boxes required for consideration – it's a full Profile 2.0 machine with BD-Live, DivX playback and 1080p upscaling, all wrapped in a sassy case in keeping with the über-cool HK house style. The only fly in this otherwise sumptuous ointment is that, at the best part of £600, the BDP 10 is pricey in the face of the latest batch of Profile 2.0 machines to hit the shops.

Feature hole

What's more, you have to dig deep to find any features that justify the BDP 10's ticket. Yes, it offers onboard decoding for DTS-HD Master Audio and Dolby TrueHD, but only to 7.1-channel LPCM over HDMI rather than to analogue outputs. There is

little in the way of picture tweaking options, and even those good looks, which not so long ago would have appeared highly contemporary, seem a little bland compared with the cosmetic charms of the latest players from LG and Pioneer.

Hooked up, plugged in, and powered on, the BDP 10 suddenly makes a whole lot more sense. The Ethernet connection is self-configuring and had plucked the IP and Mac addresses from my router even before I had found my way into the network menu. The front end interface is easy to use, opening with the simple option to play from disc, USB, or go into the set-up menu.

Like most Profile 2.0 spinners you can play an assortment of media over a USB-connected storage device including WMA, MP3 and

AV/CV

Product:
Profile 2.0
Blu-ray player

Position:
Harman
Kardon's first
BD deck

Peers:
Panasonic DMP
BD80;
LG BD370;
Pioneer
BDPLX71

JPEGs. It's not rocket science these days, but the ease with which the BDP 10 offers access to folders and ID3 tags is impressive. Factor in the chunky back-lit remote control and the solid build quality and perhaps the BDP 10 is ready to play with the big boys residing in the prestige market.

Confirmation comes with a silky smooth picture and immersive sound. The thumping soundtrack to *Slumdog Millionaire* is crisper than a bag of Walkers. Using the player's own decoding to LPCM, the BDP 10 pushes the film's early chase scene through the slums with outstanding pace and gusto. **Ramp up the volume and you are treated to a three-dimensional vista of aural effects** that does an outstanding job of putting



→ Specifications

Upscaling: YES 1080p
Multi-region: NO Region B (BD),
Region 2 (DVD)
HDMI: YES 1 x V1.3a
Component: YES up to 1080i
Multichannel analogue: NO sadly not
Digital audio: YES electrical and
optical
SACD/DVD-A: NO 5.1 music? Does that
still exist?
Dolby True HD/DTS HD decoding: YES/YES
Dolby True HD / DTS HD bitstream: YES/YES
Profile 2.0: YES, with BD Live
Dimensions: 440(w) x 66(h)
x 352(d)mm
Weight: 3.7kg
Also featuring: USB 2.0 port; DivX
playback; WMA/MP3 playback;
1080/24p resolution; JPEG viewer

Tech Labs

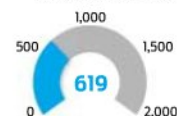
Power consumption: Watts



Idling: Forget to turn off your deck and it'll suckle on your power supply while in repose

Playing: Only a small power premium is added to put the HK into full spin

Audio Jitter: Ps



Analogue: The HK doesn't disgrace itself here, although you might want to hang onto your CD player

Loading: Boot/Java

Boot speed & tray eject

23s

Tray in to main BD menu

66s

Disc loading & Java:

Not the fastest greyhound out of the trap, with over a minute between pressing Play and getting some action

you there between the shacks, stalls, and alleyways. I suspect most people willing to spend £600 on a Blu-ray player may already own a top-spec AV amp and prefer to do the decoding there – but you can't knock HK's own internal trickery.

The same scene is a little less visually impressive, falling well short of the stunning eye-candy of the leading models from Sony and Pioneer, but mixing it well with players from the middle of the market, like the Yamaha BD-S2900. The picture is effortlessly smooth and scrolls like it's on well-oiled rails, but to my mind it's a fair bit softer than the razor sharpness of the upper-market players. Conversely, some might argue that the player does deliver a more natural picture that is easier on the eye. The trouble is, I kept finding myself searching for a sharpness control to tweak the edge definition, which the BDP 10 simply doesn't have.

Rainbow reality

Colour fidelity is on the natural side of vivid. After seeing several players in a row that were determined to redefine the rainbow with more hues, I found this rather pleasant. Rather than make *Slumdog's* Mumbai slums look overtly vibrant, the BDP 10 renders the whole location as an altogether more believable scene. From the black and white dog that

raises a lazy eye as the brothers run past, to the multi-colour rubbish floating in the river, the picture is packed full of natural-looking components. In a quick A/B comparison I am sure 9 out of 10 viewers will opt for a more vivid and artificial-seeming colour palate, but the BDP 10 has long-term appeal and I can't help think it probably gets closer to the look that director Danny Boyle intended.

However, switch to a film like Tarsem Singh's *The Fall* – a positive cornucopia of OTT colour and contrast – and the BDP 10 suffers; lacking the in-yer-face hues, contrast and black levels that make this film come alive like I know it can.

The desert island scene, for instance, is one of the most vivid and shockingly colourful sequences yet to grace a Blu-ray disc, and the Harman manages to make it look muted and shady.

Bringing up the rear

Ultimately, this Blu-ray market entrant arrives a little too late for its own good. The BDP 10 is a fine machine that, perhaps a year ago, would have earned praise for its performance. But in today's more cutthroat and ever advancing Blu-ray player market, packed with goodies like LG's £200 BD370, the BDP 10 is going to have to fight to find an audience ●

Jack it up:

To access BD-Live, you have to plug in a USB drive with more than 1GB capacity



HCC VERDICT

Harman Kardon BDP 10

£600 Approx

Price check: www.techradar.com/610763

Highs: Great sound with onboard decoder; smooth pictures; easy to use

Lows: Soft image; lacks the vivid colour and contrast of the best; awkward price point

Performance: 1 2 3 4 5

Design: 1 2 3 4 5

Features: 1 2 3 4 5

Overall: 1 2 3 4 5

More Apple juice?

It's not difficult to give Apple's slick media streamer, Apple TV, a new lease of life. **Steve May** gets hacking with XBMC and Boxee

In many ways, Apple's media-streaming solution, the Apple TV, was ahead of its time. Launched in 2007, it predated what has become a wave of AV-centric network products, designed to sit on your LAN and provide access to video and audio.

Being an Apple product, the unit is predictably sweet and minimalist, even if the spec isn't mouth-watering (256MB RAM, 40GB HDD). In practice, neither is an issue, as the bulk of your content won't be on the Apple device, but on a capacious hard drive somewhere else on your network.

In use the Apple TV is quiet and connectivity is good – choose from HDMI, component video, stereo audio and digital optical. You can take it online via Ethernet or wi-fi (I chose the former).

The interface is simple and intuitive. But unless you are a

dedicated Mac evangelist, its appeal is severely limited. Apple TV syncs with your iTunes library and hooks up to the iTunes store, and can play mainstream audio formats. However, its video file support is very limited. If your video collection contains DivX, XviD, WMV or MKV, you'll need to look elsewhere. There's also the much reported 4GB file limit and 5Mbps bitrate cap, so this is not a machine optimised for HD.

For a non-Apple user (like myself), the most fun the device offers is browsing Apple's movie trailers or looking at popular clips on YouTube. So should you pass it by?

Strangely enough, no. Because it's relatively easy to hack this streamer, giving it the kind of functionality Apple doesn't build into the box. A patch which installs XBMC (Xbox Media Centre) and an open-source

AV/CV

Product: Designer media streamer

Position: Apple's sole entry into the market

Peers: Popcorn Hour and HDX media streamers; Media Center extenders (from the Xbox 360 to dedicated units)

multimedia software package called Boxee (created by some of the folks behind the XBMC project) will transform this unit into a must-have AV device. The good news is that hacking the Apple TV is not a difficult procedure, and is detailed on a variety of websites (a popular 'How To' is on www.wired.com).

Essentially you need to download a Linux USB flash drive creator, called atvusb-creator (choose your OS flavour), and install it on a spare 1GB USB stick to create a bootable patchstick which re-flashes the Apple TV device. For Windows users, creating this patchstick is actually more of a faff than flashing the Apple box. In a nutshell, this is the routine for Vista users: unzip your atvusb download and double-click on the mk.atv-xbmc-ssh Windows batch file. This runs automatically to give you

→ Specifications

Audio/Video outputs: HDMI; component; composite video; optical audio; stereo phono; USB

Media files supported: m4v; .mp4; .mov; XviD; AVI; MKV (badly); MP3; AAC; AIFF; WAV; JPEG; BMP; GIF; TIFF; PNG

Memory: 256MB/40GB HDD
Dimensions: 197(w) x 28(h) x 197(d)mm

Weight: 1.09kg

Also featuring: 802.11n wireless networking



the USB Image Tool. From this you can install a bootable image of the firmware patch onto the USB stick.

On the Apple TV itself, first check for any Apple updates, and install them. Then power down the Apple box, insert the patchstick, and power back up. The Apple TV will now boot from the USB. You'll know it's worked when you see a graphic of Tux, the Linux penguin, sitting on the Apple box. The patch itself is installed in a matter of seconds. Once done, power down the Apple device and remove the USB. When you reboot, the Apple TV will start as usual, but the menu will sport two new items: XBMC and Boxee. Check for updates to both of these. Once done, you're good to go – Apple TV has a new lease of life.

The great thing about this hack is that it doesn't change any of the functionality of the Apple TV, so you haven't compromised any usability. You can still hang out at the iTunes store and sync with your iTunes library. And if you want, you can go select Factory Reset and reverse the entire procedure. But there's no good reason why you should...

XBMC on Apple TV looks just like it does on any other platform. It's a great interface to browse your music, video and photo collection. Simply Add Sources, to set up shares with storage devices and PCs on your network. Boxee looks altogether



Colour code:

The back of the Apple TV is more interesting to look at than the front

different. Unlike XBMC, there's an element of social networking involved in the Boxee proposition, in that you can take recommendations on software from friends and strangers alike. Naturally, you can also access your own networked multimedia files, but you can also browse other content providers. Some internet TV content, such as Hulu and the WB, is for US-eyes only, but there's plenty more good stuff that's not restricted: the hilarious Onion News Network, Revision 3 and so on.

Apple alchemy

If you already have an Apple TV, then I strongly urge you to add these two great applications for much needed extra functionality. With Boxee and XBMC installed, the Apple TV is comparable to our favourite media streaming devices, from Popcorn Hour and HDX, both of which run the same Sybass middleware. So if you've never felt compelled to audition the Apple TV because of Apple's walled-garden approach, then it's well worth reconsidering ●



New on the menu: Once the Apple TV has been patched, a new menu item appears – XBMC/Boxee



Media Centre: The XBMC interface is the same on all platforms – easy to use, impressively versatile



Boxee: Boxee offers wide file support as well as a raft of streaming media, but not all will play out on this side of the pond



The Apple TV is quintessentially Apple in design – but runs hot



HCC VERDICT

Apple TV 40GB
£195 Approx

Price check: www.techradar.com/620752

Highs: Easy to use interface; smart design; XBMC/Boxee update

Lows: Runs hot; limited appeal before hack; silly little remote control

Performance: 1 2 3 4 5

Design: 1 2 3 4 5

Features: 1 2 3 4 5

Overall: 1 2 3 4 5

→ **Specifications**

HD Ready: YES up to 1080p/24
HDMI: YES 2 x HDMI 1.3
Component: YES 1 input
PC input: YES 1 D-sub
Resolution: 1920 x 1080
Brightness (claimed): YES 1,300 ANSI
lumens
Contrast ratio (claimed): YES 20,000:1
Dimensions: 490(w) x 194(h)
x 371(d)mm
Weight: 8.5kg
Features: TI 1080p Full DC3 HD
DMD with six-segment colour
wheel; 26dB claimed noise level;
lens shift +130% vertical, +15%
horizontal; keystone +/- 5%;
throw ratio: 1.50- 2.28:1;
full IR remote with backlight;
mini remote



A labyrinth of interior cooling ducts help limit the fan noise of Optoma's new projector



Optoma aims for projector crown

But, wonders **Chris Jenkins**, is its claim of a 'paradigm shift' just a load of marketing twaddle?



When in 1962, in his book *The Structure of Scientific Revolutions*, epistemologist Thomas Kuhn coined the phrase 'paradigm shift' to describe a change in basic assumptions within a ruling scientific theory, we're not sure he had video projectors in mind (and no, we didn't know what an epistemologist was either).

But this bit of *Doctor Who*-type jargon is the term Optoma is using to describe the Themescene HD82, a mid-priced projector designed to deliver a truly cinematic experience. So can it live up to its billing?

To qualify as a paradigm shift, the HD82 would have to deliver technology and performance so stunning that it would become a new standard by which all other home cinema projectors would be measured. **It certainly has a great pedigree; Optoma is making in-roads into the projector market in every area** from the tiny pocket Pico to the affordable GT-7000 for game-players. Previous home cinema projectors such as the HD80 have set a high standard, so the HD82 would have to be something really special to hold its end up.

Certainly the claims for the HD82 make impressive reading. It's powered by Texas Instruments' DLP DarkChip3 DMD technology, and has a claimed 20,000:1 contrast ratio. New technologies include a motion control video-processing system designed to deliver smooth HD playback; PureEngine and PureMotion technologies using

a frame insertion system; and a new and highly flexible lens arrangement.

In appearance, the HD82 is certainly an improvement on earlier generations. Adopting a centre-lens layout, it's not small or light, and weighs around 8kg, but it is sleek, elegant, glossily black, and devoid of ugly panel controls. Mind you, Optoma realises this could be inconvenient should you lose or damage the main remote, so includes a mini-remote, which clips magnetically to the rear of the projector.

The main remote is similar to previous models, with backlit keys and a fairly obvious layout.

Spec respect

The HD82's connection panel is as well-specified as you could desire. You get two HDMI 1.3 inputs that support DeepColor, a DVI socket that supports HDCP, component YCbCr/YPbPr phono sockets, an S-video input, a composite video input, an RS-232 control socket, and not one, but two +12V trigger sockets.

Plenty of connections then, but more significant are the lens shift functions. Under the case are three wheels that control the 1.5x lens zoom, and vertical and horizontal shift, along with a manual focus ring. Between these, it should be possible to install the HD82 without difficulty in a wide range of environments – and the menu system offers all sorts of installation options, too.

By avoiding digital keystoneing, the PureShift system ensures a uniform quality for all the image. Projection

AV/CV

Product: Mid-range Full HD DLP projector with powerful image processing and flexible lens shift system

Positioning: Top of Optoma's home cinema range

Peers: InFocus IN82; Epson EH-TW5800

range is from around 1.5m-12.5m, with an image size of 0.76m-7.67m (diagonal, for a 16:9 image). An anamorphic lens is an optional extra, and one of the 12V trigger sockets can be programmed to activate a lens 'sled'.

Another new technology – which accounts for a significant portion of the case – is a twisty-turny system of cooling airducts. With much of the air-cooling done passively, Optoma can reduce the work done by the cooling fan, and hence the noise it produces. Clever, yes? At around 26dB it's a big improvement on previous DLP models, though still not the quietest around. Standby power consumption has been reduced too, from around 10W to under 1W – of course, that's to be expected with the new EU regulations soon to come into effect.

Real test

Given that the HD format sets a minimum standard for resolution, the real tests of a projector are now its brightness, black levels and colour reproduction. Optoma makes some extraordinary claims for the contrast ratio of the HD82, and while they might be achieved under exacting manufacturers' laboratory conditions, few of us live in laboratories, so we have to apply some real-world standards as well.

In my viewing tests, the Optoma's best contrast performance was (not surprisingly) achieved with the Dynamic Iris system switched on. Watching the Walt Disney Blu-ray of >



PC prepared: VGA, DVI and HDMI inputs make computer hookup a cinch

Prince Caspian, I was certainly impressed by terrific amounts of detail, extremely rich colours and strong contrasts (the projector defaults to its Cinema preset mode, which slightly over-emphasises brightness and colour, but it worked for this sort of material).

Pure and simple

As for motion handling, a scene where the Narnia children are observing the preparations of the enemy army illustrates the effectiveness of the HD82's Pure Motion system. This works much like a TV's 100Hz function, interpolating extra frames to smooth out motion blur. **With a split-screen function to demonstrate its effect, it's easy to see the benefits here.** Look at the siege ladders as the camera pans across. With Pure Motion switched off, the uprights blur as the camera pans. With it switched on, they're much smoother and more detailed.

Of course, there's a price to be paid, as there is using a TV's 100Hz function. The danger is that the frame interpolation will create unwanted artefacts, particularly on moving objects. Fortunately, the level of Pure Motion processing can be set, so you can adjust it to suit you.

The HD82 has effective Noise Management functions, which clean up video sources a lot, reducing movement and smoothing out areas of colour, though at the expense of introducing some aliasing.

Prince Caspian's cave sequence – where bright torches stand out against a totally black background – also shows the effectiveness of the HD82's Dynamic Iris system. Sadly though, the iris is perfectly audible above quiet dialogue. But switch it off, and the contrast performance visibly drops with the blacks losing something of their depth.

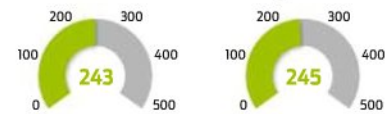
Another problem shown by *Prince Caspian's* cave sequence is the DLP rainbow effect. I hadn't really noticed it while watching evenly-lit scenes, but the torchlight made it shimmer. The six-segment design of the colour-wheel does something to reduce the effect, and it's not the worst I've seen, but as with any DLP projector, if you're prone to it, you should get a demo of the HD82 before you buy, and check out what rainbowning you can see.

If it sounds as if I have reservations about the HD82, it's only because Optoma's claims for it have to be taken with a pinch of salt. For in the real world, it's extraordinarily easy to set up, packed with helpful functions, nice-looking, and a top performer. You'll be hard pushed to find anything significantly better for the money, though there is competition around this price from the likes of Epson and InFocus.

Unlike Darwinism, the theory of relativity, or quantum mechanics, the HD82 does not represent a paradigm shift. But it is a worthy development of a distinguished product line, and a darned good projector •

→ Tech Labs

Power consumption: Watts



White screen: Pretty much average for a projector of this sort of performance

Test footage: Again, pretty much average power consumption; 'Bright' lamp mode increases suckage by about 50W

Contrast: ratio



Picture: Dynamic contrast mode delivers a reasonable contrast ratio, though short of the claimed figure; luminance is a decent 24,777fl

Colour temp: Kelvin



Presets: A small range of colour temp presets, of which Warm is the most accurate, though RGB Gain/Bias adjustments deliver a perfect 6,500K
Medium: 8,178K
Cold: 8,960K
Warm: 6,982K



HCC VERDICT

Optoma Themescene HD82
£2,500 Approx

Price check: www.techradar.com/620868

Highs: Good blacks levels; impressive colour performance; easy to set up
Lows: Some dynamic iris noise; some DLP rainbow effect

Performance: 1 2 3 4 5

Design: 1 2 3 4 5

Features: 1 2 3 4 5

Overall: 1 2 3 4 5



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October 2006



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FUJITSU TEN

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Adam Rayner proves
a sucker for the talents of
this exquisite speaker system



Boston Acoustics is one of those companies that makes high-end kit for both home and car use, since in the US they believe in such things. The company's car brochure gives out a strong design-intent image right on the front cover. It's a Rolls Royce, on a dirt track and leaping over a rally-like hump. Mad and ridiculous, I know, but it's about the savage use of the very best quality, and so I was quite charged up at the prospect of getting to play with a grown-up set of the brand's home cinema kit rather than its car stuff. And the VS Series here is Boston Acoustics' finest, with the most high-brow mission statement I have ever read, about merging art and science, like Californian hippies, man.

When they arrived I unpacked them lovingly and took a grille off – I nearly had a heart attack! The bloody tweeter was poked in like a belly button!

Now, the same thing happened on my Bowers & Wilkins HTM4. A mate's two-year-old squashed it – my own son saw it happen and didn't dare tell me, in terror of my reaction. I was able to get a replacement, but this was a review sample! A disaster!

There is a selection of ways to fix pushed-in tweeters and dust domes

AV/CV

Product:
High-end
speaker system
of great
technological
and
constructional
finesse

Position:
Boston's
flagship series
described as a
merger of art
and science

Peers:
Bowers &
Wilkins CM9;
JBL LS Series;
ATC Concept 3





Whip off the grilles to feast your eyes on the VS Series' range of drivers – including the inverted tweeters

but the very best is to apply your mouth and suck it out with your tongue. I tried it and it wasn't having it. I could get purchase but could feel it was fixed, clearly more than just pushed in. I looked at Boston Acoustics' very brief manual, which really just describes basic use and best placement. Then, like the tiny-but-crucial details on Ikea flatpack instructions, I could see that all the tweeter pictures had this irregular looking dent in the middle. Oops. Needless to say I grew donkey ears and glowed so red you could have used me as a traffic light.

Luckily, I hadn't been like a Dyson vacuum cleaner and sucked it rotten, but rather applied the most delicate and even pressure and, apart from some lick spittle, there was no real harm done.

Ethereal excellence

All the cabinets in this VS Series use this unconventional tweeter design, called here a Super Wide Bandwidth tweeter. Boston worked out that you can go totally pistononic to 30kHz if you stick the middle of a regular silk dome tweeter to a brass plug in the middle. So, it has all the fabulousness of a ring radiator tweeter but, dare I say it, even slightly better performance – as the sound of these speakers is ethereally delicious.

The moment they fired up I was transfixed; even the crap at the start of my *Wall-E* Blu-ray was awesome. The balloons in the *Up!* trailer rustled seductively; the dynamic speed and purity of Luxo the lamp's *boings* were just absurdly right-there-in-your-face.

Then it was into *Wall-E*, with its clever use of an old show tune by Michael Crawford overlain with music by Hollywood composer Thomas Newman. The soundtrack is wonderful – atmospheric and at times hugely emotive. The sheer musicality of this 5.1 array was given a real test and it came out shining.

Louis Armstrong gets a number, too (*La Vie en Rose*), and it felt like he was in the room with me.

The detail and placement was high-quality and would have silenced any flat-earth stereo hi-fi nutter with its accuracy. Back in *Wall-E*'s world,

I could count the footfalls of the tiny-but-cute cockroach; and the rest of the bandwidth was perfectly smooth and homogenous, with exquisite blending from driver to driver.

The single shortcoming to this high-end package, in my opinion, ➤



No slouching: The VS 325C centre has a little foot at the back to help it sit up straight

is the bass end, which became apparent in the scene where EVE has a joyous fly around Earth. Newman's soundtrack swells and will move you if there's any poetry in your soul at all, yet **a crucial part of this feel is the exciting fullness of the bass**, all rippling depth with taut edges.

In my own system, I use a B&W ASW825 subwoofer for its 1,000W of grip, along with a £2,500 REL Stentor for its absurd below -10Hz authority. Between them the combined result is, as Vinnie Jones said, 'Emotional'.

The trouble is, that while the Boston Acoustics' VPS 210 dual 10in woofer (one driven, one a passive radiator or wobbler) has a 500W amplifier in its guts, and does go very deep, it just cannot push enough air

around in these overblown cinematic moments. You can hear that the product is struggling and have to wick it back a tad.

The subwoofer is exquisite to look at, as are all the loudspeakers, but I would love to see this as a dual 12in beast with a kilowatt amp – or maybe even a three-kilowatt dual 15in monster – as the performance of the rest of the VS system is commensurately excellent. Bass is all about logarithmic scales of Watts and air to push about, so this isn't total madness on my part. It would be very costly, of course.

Non-parallel lines

Elsewhere, the VS 325C centre has a wee foot to the rear to help the non-parallel sided enclosure face the right angle. Meanwhile, the VS 336 towers also have two small bars to support the back of the box, as no two sides of the enclosure are parallel. This is to avoid internal reflections. Only grunty old-fashioned or cheapo speakers are cubic boxes with square edges these days!

The cones are made from a processed paper pulp and are called, rather grandly, Organic Composite Cone Material (OCCM). All except the sub are rear-ported and nicely gas-flowed and curvy back there, so will need some space away from the walls, as do the VS260 bookshelf rears.

Overall, this is a very high-end group of speakers with an astonishingly posh, detailed sound, and premium-grade styling. Get four of those woofers and you will still slap the hell out of systems costing a serious slice more ●

→ Specifications

Boston Acoustics VS 336 towers

Drive Units: 3 x 6.5in Organic composite Cone Material (OCCM) drivers; 1 x 4.5in OCCM midrange; 1 x 1in Super Wide Bandwidth (SWB) soft dome tweeter
Enclosure: 3-way rear ported
Frequency Response: 35Hz–30kHz
Sensitivity: 87dB (2.83V @ 1m)
Power Handling: 10–400W
Dimensions: 250(w) x 1170(h) x 325(d)mm
Weight: 30.12kg

Boston Acoustics VS 325C centre

Drive Units: 2 x 5.25in OCCM bass drivers; 1 x 3in OCCM midrange; 1 x 1in SWB soft dome tweeter
Enclosure: Rear ported
Frequency Response: 65Hz–30kHz
Sensitivity: 90dB (2.83V @ 1m)
Power Handling: 10–250W
Dimensions: 716(w) x 181(h) x 161(d)mm
Weight: 11.78kg

Boston Acoustics VS260 surrounds

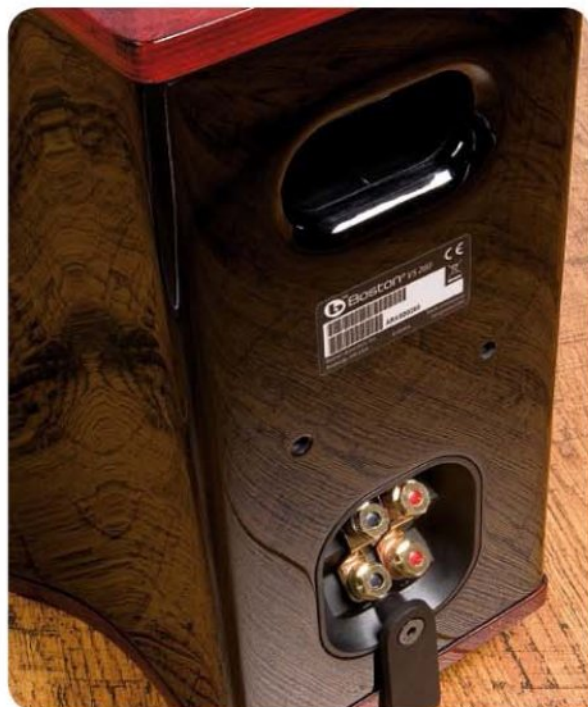
Drive Units: 1 x 6.5in OCCM bass driver; 1 x 1in SWB soft dome tweeter
Enclosure: Rear ported
Frequency Response: 45Hz–30kHz
Sensitivity: 87dB (2.83V @ 1m)
Power Handling: 10–250W
Dimensions: 225(w) x 365(h) x 260(d)mm
Weight: 4.1kg

Boston Acoustics VPS 210 subwoofer

Drive Unit: 1 x 10in long throw OCCM woofer with 3in voice coil and 1 x 10in diaphragm as a passive radiator
Enclosure: Passive radiating
Frequency Response: 22Hz–150Hz
On board power: 500W RMS Class D
Dimensions: 353(w) x 381(h) x 540(d)mm
Weight: 28.8kg
Connections: Phono line-level stereo inputs; LFE input; passthrough socket

Hook up:

All speakers including the surrounds come with binding post terminals



HCC VERDICT

Boston Acoustics VS Series
 £5,500 Approx

Price check: www.techradar.com/623230

Highs: Scintillating effortless highs with fabulous imagery and delicacy with a slice of authority

Lows: The subwoofer is under powered even at half a kilowatt as the rest is so breath-taking

Performance: 1 2 3 4 5

Design: 1 2 3 4 5

Features: 1 2 3 4 5

Overall: 1 2 3 4 5

High Definition Home



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Installer of the year



A recent project involved the dramatic transformation of a typical loft into a spectacular cinema media room.

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Less dosh, more Tosh

Toshiba's latest upscaling TV thinks for itself. **Sam Kiildsen** is scared

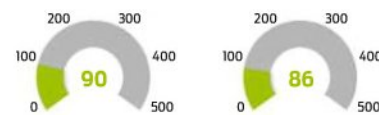


→ Specifications

HD Ready: YES Full HD, 1080p24
Progressive scan: YES NTSC and PAL
Digital TV tuner: YES CI slot
Scart: YES two (1 RGB)
Component video: YES (HD-enabled)
HDMI: YES four v1.3 HDMI's
PC input: YES
Resolution: 1920 x 1080
Brightness: 450 cd/m2
Contrast ratio: 50,000:1 claimed
Dimensions:
 902(w) x 590(H) x 94(d)mm
Weight: 16.7kg
Features: Resolution+; Meta Brain;
 Active Vision II; Game Mode; Eco
 Panel; Dolby Digital Plus; Nicam
 Stereo; 8-day EPG

→ Tech Labs

Power consumption: Watts



White screen: While Standard mode power consumption is reasonable, Dynamic mode adds about 25W

Test footage: Movie play changes little. The Auto Brightness Sensor reduces consumption by 40W in a dark room

TV contrast: ratio



Picture: Contrast ratio is nowhere near the claimed figure, and luminance is unremarkable at 59.07fl

Colour temp: Kelvin



Presets: Of the 10 numbered presets, only preset 3 gets acceptably close to 6,500K. Manual tweaking delivers perfect results.
 3: 6,390K
 5: 7,233K
 10: 11,318K

AV/CV

Product:
 37in Full HD LCD TV with Resolution+ upscaling technology

Positioning:
 Entry-level – Toshiba also offers higher-spec XV and ZV series TVs

Peers:
 Samsung LE37A556;
 LG 37LH3000

Toshiba's 2009 image processing tech goes one better than most: it comes with an actual brain! Not a real organic brain, of course, but the terrifyingly-named 'Meta Brain' feature. It sounds like something out of a Michael Bay blockbuster, but it's actually a chip charged with controlling Tosh's Resolution+ upscaling tech and Active Vision II colour/contrast/motion/detail processing.

The 37RV635 doesn't allow the user to set his or her own upscaling levels

– it's all up to the Meta Brain. Thankfully, it seems to do a fine job, but without the ability to tweak things it's impossible to know if Toshiba is giving us the best picture possible.

Not that this screen has all mod cons. There's no room for 100Hz motion processing, for instance, and the black levels are no match for those from LED-backlit screens. The set's budget status also shows with the remote, which is tiny and cheap-looking, with dinky little

buttons. But then this is a 37in Full HD screen built for a price.

Overall, picture performance is highly creditable, particularly when hooked up to a hi-def source. Viewed from a reasonable distance images sport sufficiently crisp edges, and this detail means there's a nice, pixel-dense quality to its images.

Standard-def from Freeview and DVD looks fine – convincingly detailed and low on noise. The fanfare Toshiba has made over Resolution+ and its 'close to HD' picture quality isn't total nonsense, then, although some viewers may feel a tad disappointed when *EastEnders* doesn't sparkle like *The Hills*.

Lot for a little

That said, connectivity is good. There are four HDMI inputs, component video, PC and a couple of Scarts, so you're unlikely to want for spare sockets when adding new gear. The speakers produce plenty of clean, distortion-free audio, too.

Overall, this is a fine choice if you are looking for an all-purpose set ●

HCC VERDICT

Toshiba 37RV635
 £550 Approx

Price check: www.techradar.com/620813

Highs: Decent picture quality; affordable; good connectivity
Lows: Average black level performance; budget remote

Performance: 1 2 3 4 5
Design: 1 2 3 4 5
Features: 1 2 3 4 5

Overall: 1 2 3 4 5

Home run, or strike out?

Chris Jenkins streams Freeview across his home network

Most recent multimedia products seem to be designed to get files from a PC onto your TV, but HDHomeRun reverses that process. In essence, it's a dual DVB-T tuner with networking capabilities, so once you get it connected to a signal source and your home network, you can route Freeview pictures to any display – be it a laptop, a desktop PC, or a TV. Using suitable software you can then set up a PVR-type record-and-playback system.

HDHomeRun is an unimpressive-looking plastic box with an Ethernet socket and two aerial sockets on the back. You get RF leads, an Ethernet cable, and Windows, Mac, and Linux drivers supplied.

Highs

- Works well with cabled networks, or using a mains power networking system such as HomePlug.
- It's convenient to have two tuners



in one box, and cheap enough to build your own 'tuner farm'.

- Decent picture over the network, considering the quality Freeview.

Lows

- The HD part of the name is misleading; it doesn't contain a hard drive, and it doesn't receive HD signals.

• No actual video recording or playback software is supplied; you have to provide something like VLC and GB-PVR. And there's no manual, other than the two-pager on the SiliconDust website.

HCC VERDICT

SiliconDust HDHomeRun
£160 Approx

Price check: www.techradar.com/622655

Overall: 1 2 3 4 5

Black box: SiliconDust's HDHomeRun is unimpressive to look at, but it's what's inside that counts

SONY NWZ-X1060 WALKMAN PMP → £290 Approx → www.sony.co.uk

Walkman gets serious...

But there's still some way to go says **Steve May**

The last time I played with a Sony personal media player, it was a horrible experience – the interface was a work of the devil designed to stop you from using the thing in any constructive way. Thankfully, times have changed, and the brand's

NWZ-X1060 is a good deal more accommodating. You no longer have to jump hurdles to move files around – a simple drag and drop will do – and the touchscreen interface is a joy to use.

The model reviewed here has a capacious 32GB drive (enough for 120 hours of video), although a cheaper (£210) 16GB version is also available. The feature set is tempting: wi-fi connectivity, YouTube, noise cancelling headphones, web-browser and a super-sharp 3in 16:9 OLED display. There's also an FM radio.

Highs

- AV quality is high. MP3s sound crisp and dynamic, thanks in part to a high-quality, and tiny, digital amp module; video playback is smooth and sharp.
- Audio codec support is good. MP3, WMA, AAC and WAV are all

supported, although OGG is noticeable by its absence.

Lows

- The player can handle MPEG-4 and (most) WMV files but turns its nose up at DivX, AVI and other common download formats. To use these you'll need an app like DoubleTwist that can convert your files into an acceptable format on the fly – but this is slow and clunky.
- The touchscreen will soon become a permanent memorial to your fingerprints.
- Using noise cancelling accelerates battery drain.

HCC VERDICT

Sony NWZ-X1060
£290 Approx

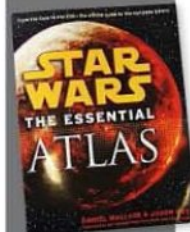
Price check: www.techradar.com/622683

Overall: 1 2 3 4 5



In Brief

Star Wars: The Essential Atlas
Lucas Books
£19 Approx



Are you the kind of Star Wars-obsessed fanboy who needs to see detailed maps of the Borleias Front? Do you yearn to chart the troop movements of the Second Sith War? If so, this 200-odd page full-colour atlas/encyclopedia is for you. If not, stay as far, far away from it as possible.

1 2 3 4 5

Primare, not Primark

Danny Philips accepts that 'combi' doesn't have to be a dirty word



→ Specifications

Video upscaling: YES to 1080p
 Multiregion: NO Region 2-only
 HDMI: YES 1 x v1.3
 Component: YES 1 output
 Scart: YES 1 RGB output
 Phono audio outputs: YES 2 x stereo, 1 x sub line out
 Digital audio outputs: YES Coaxial and optical
 SACD/DVD-A playback: NO
 Dimensions: 450(w) x 110(h) x 350(d)mm
 Weight: 8kg
 Features: DAB/FM/AM tuners; iPod connection; RS232 & IR ports; RGB Scart; 2 x 75W amplification; Dolby Digital and DTS decoders

Just the mention of the words 'combi' or 'integrated' strikes fear into the hearts of some home cinema purists, but when it's a renowned high-end brand like Primare wielding the welder, you can be sure AV quality remains a priority.

The DVDi10 is an integrated DVD player, 2.1-channel receiver, and DAB radio tuner, the natural evolution of the Swedish company's CDi10 CD/amp combi. It aims to deliver separates performance from a single stylish unit. Just match it up with stereo speakers and a powered sub.

For this money, **you'd expect rock-solid build quality and that's what you get.**

The metallic bodywork is sturdy, and the fascia moody and minimal. Three thick feet quell vibrations and the row of bullet-like buttons with illuminated green icons on top is delightfully old school.

Good CV

From the spec sheet, its DVD credentials are solid. At its heart is the Genesis FLI2300 video processor, which handles 1080p DVD upscaling duties, ably supported by an Analog Devices ADV7320 video DAC. It also plays back MP3s and JPEGs from DVDs or CDs, but not DivX, SACD or DVD-Audio – all missed chances.

On the back, three sets of analogue phono cater for external sources, but there are no digital inputs. Coaxial and optical digital audio outputs offer a path to full 5.1 with a separate receiver, and the built-in analogue to digital converter lets you pass on line sources from

these outputs. On the video side, you get HDMI, component, S-video and composite outs and there's an iPod connection offering front panel control and a metadata display.

On the receiver side, Primare claims a rating of 75W per channel and naturally it decodes Dolby Digital and DTS soundtracks. The DAB radio tuner offers 10 presets and 196kHz/24-bit conversion.

One odd thing: I thought the OS menus distinctly old-fashioned. It's since transpired that Primare has updated these – existing owners can take their DVDi10 to their dealer to get the new software.

Putting that disappointment aside, I fired up *Apocalypse* on DVD and was hit for six by the sound. The drums that propel Jaguar Paw through the rainforest are vital and urgent; the sharp, sweet treble coaxes out subtle detail and there's a depth and richness that also permeates CD playback.

The 1080p picture quality is immaculate too – the rich tapestry of the film's rainforest was conveyed with pristine clarity, and there are no noise or upscaling artefacts to report. Contrast, colour saturation and edge definition are excellent. A run-through of the Silicon Optix HQV underlines the quality of the video processing, as diagonal lines are free from stepping and feathering.

The DVDi10 is pricey for what it is, lacks a few features you might expect, and has a clunky, operating system. Luckily, it makes up for it with a classy AV performance and an eye-catching esoteric design ●

AV/CV

Product: High-end stylish 2.1-channel DVD receiver

Positioning: The DVD version of the CDi10 system

Peers: Onkyo DR-S501; Denon S-302x

→ Tech Labs

Power consumption: Watts



Idling: The amplifier makes consumption higher than that of a DVD player, but even in standby this measures a stunning 34W

Playing: Play mode increases consumption slightly – you can cut a couple of watts by dimming the display

Audio Jitter: Ps



Sound: Very good audio jitter figures, as you would expect from something with this tank-like construction and high-quality audio components

Video Jitter: Ns



Vision: Very good performance, again in line with the quality you would expect from this level of construction



HCC VERDICT

Primare DVDi10
 £1,750 Approx

Price check: www.techradar.com/620774

Highs: Superb build quality; top-notch picture and sound

Lows: No DivX, DVD-A or SACD support; ugly onscreen menus; confusing remote

Performance: 1 2 3 4 5

Design: 1 2 3 4 5

Features: 1 2 3 4 5

Overall: 1 2 3 4 5

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- Built in FM radio
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Product of the Month

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Code IRBKITS

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At last, a cable free solution for HDMI. Any of the four HD inputs (2 x component and 2 x HDMI) can be sent wirelessly up to 20m to the receiver. The signal is uncompressed and remains up to and including 1080p. IR feedback gives you source control from the viewing area.

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Code GV800

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Input signals:

- Scart (RGB or composite)
 - Component video (via supplied multi pin adaptor)
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- Outputs:
- HDMI output fixed 720p
 - Audio via 3.5mm jack socket



Code HDUS

only £69.00

Cat5Blaster QC Active

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Code C5QCA

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Code KIRA

1 pair of Modules

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Code KIRAM

Additional Module

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| | | |
|--|---------|---------------|
| 1080p rated 3m length | HDHVD3 | £14.99 |
| 1080p rated 10m length | HDHVD10 | £32.99 |
| Premium range 1080p rated 3m length | HDHDC3 | £29.99 |
| Premium range 1080p rated 10m length | HDHDC10 | £49.99 |
| Premium range 1080p rated 15m length | HDHDC15 | £59.99 |
| professional range 2160p rated 1m | HDHDC1 | £29.99 |
| professional range 2160p rated 3m | HDHDC3 | £39.99 |
| plug professional range 2160p rated 7.5m | HDHDC75 | £69.99 |

HDMI cables – Adaptors

| | | |
|-----------------------------------|---------|---------------|
| Mini Display Port to HDMI adaptor | MDPHDMI | £14.99 |
|-----------------------------------|---------|---------------|

Video Conversion

| | | |
|------------------------------|----------|----------------|
| Scart to HDMI (720p) | CS720PHD | £120.00 |
| Component to HDMI | CP280H | £115.00 |
| RGB to s-video | RGB2S | £69.99 |
| RGB to component | APT1 | £84.00 |
| Component to RGB | APT2 | £84.00 |
| Composite/s-video to VGA | AVT3300 | £45.00 |
| Composite/video to component | CPVSRGB | £69.00 |
| Composite/s-video to HDMI | CM392 | £207.50 |

Video over CAT5

| | | |
|---|--------|----------------|
| Composite/s-video over CAT5 (no IR) | CSQC | £89.99 |
| Composite/s-video over CAT5 (with IR) | CSQCA | £99.99 |
| Composite/s-video with four remote receiver | C5KDA4 | £269.00 |
| Component over CAT5 | C5B | £259.99 |
| Component over CAT5 (wallplate) | C5QCCP | £149.99 |

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PVR to the people

With several rival recording systems vying to supercede the standard VCR, **Chris Jenkins** looks at solutions designed to time-shift your TV viewing

THE TEST

As well as viewing Freeview broadcasts on each of the four products here, we compared the quality of their recordings to the original programme. We also looked at material downloaded from the 'net in a variety of formats, and, where possible, ran our standard video and audio analysis tests by transferring test signals onto compatible media, as well as our standard power consumption tests.

As digital media formats evolve, it's a challenge for any playback device to keep up. Almost any such device will be firmware upgradeable, but we've looked at how flexible and straightforward this process will be. Lastly, we've done some timing tests to give us an idea of how quickly the units respond – like all digital systems, the trade-off between cost and processor power can result in a design, which is as fast as lightning, or as slow as an MP paying back his expenses.





THE CONTENDERS

NEW DIGITAL VISION DV-DTR1 GIGO

£70 Approx

A USB stick-based approach could be the sensible way to replace VHS, but the GiGo's functions are limited

NEW EMTEC P800 HDD MOVIECUBE

£250 Approx

Emtec's portable drive-based system has hi-tech appeal yet doesn't cost the earth

NEW SAGEM DTR67500T

£180 Approx

The latest model in a popular line of PVRs, the Sagem should prove a success with experienced PVR-hedz

NEW WYPLAY WYPLAYER

£430 Approx

This network-ready device will wow the technorati, but might frighten the more average consumer

The old-fashioned VCR is nearly obsolete. VHS tapes use up a lot of space, they're limited in their picture quality, and they take an age to spool through. Digital formats are, theoretically, superior in every way. Storage is more compact, access is non-linear and instant, and picture and audio quality are limited only by media format. What's more, digital systems can support music and still images as well as work with AV material.

But there's still plenty of room for debate as to how exactly we should store and access all this multi-media material. For simple TV time-shifting, the requirements are straightforward. You need to be able to identify a TV programme, record it, watch it later, and wipe it to clear storage space when you've done with it.

But what if you want to copy lots of VHS material to a digital format, or move that recording somewhere else? Do you burn it to a disc, move it to a portable hard drive, transfer it to a pocket USB stick, or put it on a

network? And what sort of format do you want it in? A compressed one which sacrifices quality for speed, or a full bandwidth high-quality version, which may be slow to transfer?

So, there are plenty of solutions to the problem of replacing VHS, and no clear indication as to which is the best in the long term. Possibly they will all find their place in the digital future.

Features

Digital Vision's DV-DTR1 GiGo digital TV recorder is designed to connect between your aerial and TV, acting as a combination Freeview box and VCR replacement. It has no internal storage, but records MPEG-2 files to USB memory sticks, which DV describes as 'the world's favourite recording media'. You can, of course, take recordings from these USB sticks and play them on a PC.

USB flash drives have obvious advantages – robust, no moving parts, high capacity, and easy to transport. You can connect up to three USB flash drives to the GiGo at

once. This lets you add more storage while still being able to access your existing recordings, and allows you to copy recordings from one USB stick to another without needing a PC. Recording size is restricted to the 4GB limit of the FAT32 file system.

Theoretically you can also use other portable USB devices such as hard drives (though you won't be able to use devices which require a USB connector for data and another for power).

You could even use the GiGo to digitise old VHS tapes; just connect a VCR to the GiGo's Scart socket, select AV input, play the tape and record on the GiGo. You could also copy back from a GiGo USB stick to VHS.

The OS includes an 8-day EPG. It allows you to watch one recording while making another, scheduling recordings from the EPG onto any one of the three USBs.

The crucial point to bear in mind about the GiGo is that its only output is Scart, and picture resolution is limited to SD (720 x 576 resolution).

DIGITAL VISION DV-DTR1 GIGO → £70 Approx → www.digitalvisiontv.com



Connections

A USB

There are three USB 2.0 sockets on the front panel, used for flash memory sticks or other USB storage devices

B RF

These two sockets are for an input from an aerial and a loopthrough to the TV. And that's your lot for sockets...

C Scart

There are two Scart connections, one to the TV, one an input/output for a VCR, supporting composite, S-video and RGB

In brief

Digital Vision will be a new name to most of us. The company has a reputation for building STBs for third parties, and specialises in inexpensive mass production designs using the maximum number of common parts.

This means that innovation isn't high on Digital Vision's list of

priorities, but the GiGo bucks that trend by opting for USB flash memory sticks as its storage medium. Whether GiGo will catch on may depend on how willing we are to embrace USB as a ready replacement for VHS.

The performance spec of the DTR1 is basic, but a range of advanced design are on their way.

USB three:

The three front-panel USB 2.0 ports will also support hard drives



Emtec describes its P800 HDD Movie Cube as a portable multimedia player with removable drive. It has no internal storage capacity, but comes with a 250GB Emtec 2.5in SATA pocket hard drive, which fits in a slot on the top. Other devices can be connected by USB.

It features a hybrid analogue/digital (Freeview) tuner, and has built-in 'net radio, PVR and EPG software including 'live pause' functions. It supports HD material and has an HDMI output, as well as Ethernet connectivity, which gives it NAS (Network Attached Storage) functions, and is wi-fi compatible using an optional Emtec adaptor.

Sagem's DTR67500T is a straightforward PVR with dual Freeview receivers, a 500GB hard drive and HDMI output. Its sophisticated EPG is based on Sagem's satellite STBs, and features an 8-day timer, dual record, Live Pause, series recording and PIP. It records in only one format, an MPEG-2 transport stream, but it can

export recordings onto USB devices. It can only import video recordings that it made itself, though it can play MP3 and JPEG files from USB.

The final entrant in our group test, Wyplay's Wyplayer, is a very sophisticated networkable media centre with a dual Freeview decoder and recorder and a seven-day EPG. It records to a SATA hard drive (you choose the capacity), and can use NTFS formatting for large file storage.

It has comprehensive connections including HDMI (supporting up to 1080p), optical digital and analogue audio, USB host and device, Ethernet

FEATURES

Round-up: Well, you certainly get what you pay for. From the simplicity of the GiGo to the sophistication of the Wyplayer, this range of PVRs lets you opt for the most basic of recording functions or the most wide-ranging, flexible and expandable range of features

Digital Vision DV-DTRI GiGo: 1 2 3 4 5
Emtec P800 HDD Movie Cube: 1 2 3 4 5
Sagem DTR67500T: 1 2 3 4 5
Wyplay Wyplayer: 1 2 3 4 5

and wi-fi. It'll spin practically any file format including MPEG-1/-2, MPEG-4, XviD, DivX, VOB, WMV, JPEG, BMP, MP3 and WAV. It's DCHP compatible for connection to a network, and can access the 'net via a Wyplay portal which you can customise using RSS feeds. A bit like widget-equipped TVs, this offers rather more than Teletext, and rather less than the real web.

Design

We like our boxes to be bright orange, covered in leopard-skin or decorated with pink elephants, but it seems we're in the minority. These PVRs are all pretty much just small black boxes. Oh well.

The GiGo is unprepossessing, made of a cheap-looking plastic, and feels fragile in the hand. In contrast, its huge, bulky remote control could be used to stun an ox.

It has the lowest socket-count imaginable with a Scart input/output, RF input/output, and the three USB ports. Other than that you get a

EMTEC P800 HDD MOVIE CUBE → £250 Approx → www.emtec-international.com



In brief

Though the Movie Cube stands up well as a multimedia dock, with a good range of connections and wide media support, Emtec might have made a strategic mistake by selling it with a portable hard drive. This pushes up the price to a level where alternatives like the relatively cheap and cheerful Western Digital WDTV might seem like a more sensible buy – particularly if you already own a portable drive.

Costs a fair wedge:

The Emtec looks good but its portable drive pushes up the price

Connections

A Plug in

The USB ports include support for HDDs, USB Host, and other USB devices

B Back of the 'net

The Ethernet 10/100 connection allows the Emtec to be connected to a network, but wi-fi connections require an optional dongle



power light and four little rubber feet. Scart and RF cables come with the package, but crucially, no USB stick.

The Emtec Movie Cube is actually a rather neat wedge shape – someone needs to tell them that a cube is supposed to be a regular hexahedron. The right side has USB host and SD card sockets with another USB host socket to the rear, plus a LAN port. Video outputs include component and HDMI; audio includes stereo analogue and optical and coaxial digital outputs; and there are RF and analogue AV inputs.

The top has a covered slot designed to fit Emtec's own portable USB hard drives – a Gdium Liberty 1000 250GB drive is provided. It can, of course, be connected to other devices via USB, and you can use other USB devices with the Movie Cube, but it's annoying that the drive slot will only fit Emtec's. Also supplied is a neat, comfortable remote control, USB and Scart-to-phono cables, and a pouch for the portable drive.

Sagem's machine is a well-established design – in fact it looks identical to previous generations, and the only real difference is in the hard drive capacity. It seems fairly sturdy despite being made of lightweight plastic, but most of this weight is down to the hard drive, as the power supply is external. The front features basic controls and a USB port. On the back are RF in and out, Scart in and out, HDMI out, coaxial and optical digital audio out, component video out and stereo analogue audio outs.

Lastly, the Wyplayer is so black and slablike that it brings to mind the

monolith from *2001: A Space Odyssey*, or maybe the sleeve for the Spinal Tap album *Smell the Glove* (the one that was so black, it couldn't be any blacker). Anyway, that's the Wyplayer. There's nothing on the front but a USB port and an infrared sensor. The back features RF in and out, HDMI out, composite video out, stereo analogue audio out, optical digital audio out, two more USB 2.0 connectors, a USB slave connector, Ethernet LAN port and connector for the 12V power supply. A major feature of the Wyplayer's design is its remote control. It's black and *bijou*, and features some obscurely labelled buttons and a multi-way scrolly thumbwheel/cursor thingy.

Having said all that, the really important design element of a digital device is its GUI: the GiGo's is simple and text-based, so it's easy to navigate around its setup, EPG and media management functions. The Emtec's has a lot of snazzy graphical elements, but is let down slightly by some crude info bars, and Franglais

DESIGN

Round-up: All the products have design plusses and minuses. The GiGo is easy to use but tacky, the Wyplayer is sturdy but a bit too French for its own good, the Sagem is solid but a little dull, and the Emtec is smart but annoying

Digital Vision DV-DTR1 GiGo: 1 2 3 4 5

Emtec P800 HDD MovieCube: 1 2 3 4 5

Sagem DTR67500T: 1 2 3 4 5

Wyplay Wyplayer: 1 2 3 4 5

SAGEM DTR67500T → £180 Approx → www.sagem-communications.com



In brief

The Sagem line consists largely of solid, no-nonsense set-top boxes with a good range of features but nothing gimmicky or redundant. This model is an evolution of the range rather than representing anything brand new, though its low power consumption might attract some eco-warriors. Other than that it does

the watch-and-wipe thing very well, offering the useful ability to download to USB devices almost as an afterthought.

It doesn't offer compressed formats so transfer to a portable device may be slow. Sagem's current range includes a Freesat+ HD box, and parent company SAFRAN makes unmanned reconnaissance drones.

Set for success: The Sagem builds on a long line of popular set-top boxes

Connections

A Second choice

The component outputs carry video upscaled to 1080i as an alternative to the HDMI socket

B Sound options

Stereo analogue audio sockets make it easier to connect to a hi-fi system, while the optical digital audio socket is ideal for connection to an AVR

C Go Scart

As you would normally expect to find on a VCR, there are two Scart sockets



text messages such as 'Press OK to browser files' and 'Unwritable partition'. The Sagem's menus are an odd combination of clear, text-based EPG, and some unnecessarily fancy icons – would you have guessed that the way to access the USB port is via a graphic of an eye? Lastly, the Wyplayer's GUI is, if anything, too sophisticated, with colourful icons, animations, and arty transitions. After a while you wish you could just switch them off and read a nice simple text menu.

Performance

Obviously, the first requirement of a VCR replacement is that it should have a good quality Freeview tuner, and be able to record and play back exactly what you see.

The GiGo offers swift and efficient autotuning, and recorded effortlessly to USB – a 1GB stick will store around 30 minutes of the MPEG-2 transport stream. I found some older USB sticks had formatting problems, but you'll probably want to use newer, larger

capacity ones anyway. Since it won't play anything other than MPEG-2 TS files I couldn't rate it with our standard test signals. As you'd expect from a device with no moving parts, power consumption was negligible at 5W.

The Emtec detected my network quickly, but TV auto-tuning was slow, and some stations needed to be tuned manually. Off-air and recording playback quality were excellent, though audio jitter testing gave an unremarkable 980.9ps. The 150GB pocket drive stores around 37 hours of recording, and data transfer to USB was swift. Playback of the MPEG-2 transport stream on PC worked fine. Power consumption during HDD playback was a low 11W.

The Sagem's auto-tuning worked quickly and efficiently, and the off-air and playback picture quality were very good. Audio jitter tested reasonably well at 801ps, suggesting decent component quality. Power consumption was a reasonable 13W.

The Wyplayer, however, seems to suffer from an underpowered

processor – its response to remote control commands is gallingly sluggish. But it tuned swiftly and efficiently and displayed excellent upscaled 1080i pictures. Since it supports a wide range of files including DivX7, MOV, MP4, WMV, JPEG and MP3, it handles practically everything we threw at it, and audio jitter was a remarkably good 163.9ps. Power consumption during playback was 17W – highest in this group, but no more than an average DVD player.

PERFORMANCE

Round-up: The Wyplayer and Emtec support HD playback, the Sagem upscales SD signals to 1080i, and the GiGo supports only SD. But I don't have any real complaints about any of their performances except that the Emtec's tuning seemed slow and inefficient, and the Wyplayer's remote control response was sluggish. All did a very good job with Freeview signals and none struggled with file playback

Digital Vision DV-DTR1 GiGo: 1 2 3 4 5

Emtec P800 HDD MovieCube: 1 2 3 4 5

Sagem DTR67500T: 1 2 3 4 5

Wyplay Wyplayer: 1 2 3 4 5

WYPLAY WYPLAYER → £430 Approx → www.wyplayer.com



In brief

Wyplay is based in the south of France and has been designing multimedia platforms since 2006. Its team of 85 engineers covers hardware, software, and conditional access, to semi-conductors and smart cards. It now specialises in the TV market. Its products are designed to be as simple and easy to use as

possible, with intuitive user interfaces, and a remote control that uses a wheel and only 11 buttons. The Wyplayer is a dual-tuner hard drive recorder with PVR, networking and internet functions, and supports a huge range of formats and connections. It's currently only available on line, so visit the website to order.

French toast:

The Wyplayer certainly has Gallic charm, but does it know its onions?

Connections

A Wot no Scart?

The cluster of analogue AV inputs offers low-level connectivity, but note that there isn't a Scart socket

B Port of call

The USB ports offer a full range of functions including HDD, device and host connections for a PC

C Get online

The LAN port gives the Wyplayer access to a network and, via the Wyplay portal, to a selection of websites



Final standings

All these products serve one essential purpose, which is to make it easy to record and watch telly. The rest, as they say, is mere icing on the cake. Whether it's the convenience of the GiGo's USB memory sticks, the network functions of the Wyplayer, the Emtec's facility to use portable high-capacity drives, or the Sagem's advanced EPG functions.

The quirky and appealing GiGo comes last, only because we're not entirely convinced that Johnny Consumer will dump VHS and adopt USB sticks. But we're open to argument – we just wish that it supported more video or audio formats, and offered more output options than Scart.

The Emtec is powerful, flexible, comprehensive, and pretty well future-proofed, although we don't like the way



it tries to lock you into using Emtec drives, and its tuning isn't perfect.

The Wyplayer is the sort of advanced device which will appeal to tech-savvy users. If you already have a LAN and want to exploit the opportunities of the net, this is the one for you – if you can afford it.

However, at present we find it hard to argue against the Sagem – a straightforward PVR with a decent HDD capacity that'll handle everyday time-shifting functions and replace your VCR. And it even has the capacity to export its recordings to USB ●

1ST



HCC VERDICT

Sagem DTR67500T
£180 Approx

Price check: www.techradar.com/608808

Highs: Good performance; flexible EPG

Lows: Won't import video it hasn't recorded

Performance: 1 2 3 4 5

Design: 1 2 3 4 5

Features: 1 2 3 4 5

Overall: 1 2 3 4 5

→ Specifications

Tuner: YES Dual analogue/digital

HDMI output: YES 720p/1080i

Component video output: YES

Scart: YES Two

Audio output: YES Stereo phono and coaxial

Ethernet: NO

USB: YES one, 2.0

Video formats: MPEG-2 TS

Audio formats: MP3

Image formats: JPEG

Other formats: None

Dimensions: 310(w) x 46(h) x 199(d)mm

Weight: 1.3kg

Features: Pause/Rewind live TV; two-hour buffer; 8-day EPG; series recording; dual recording plus recording playback; picture-in-picture; export video to USB

2ND



HCC VERDICT

Wyplay Wyplayer
£430 Approx

Price check: www.techradar.com/618263

Highs: Incredibly flexible and powerful

Lows: Overdesigned GUI; annoying remote; pricey

Performance: 1 2 3 4 5

Design: 1 2 3 4 5

Features: 1 2 3 4 5

Overall: 1 2 3 4 5

→ Specifications

Tuner: YES Dual analogue/digital

HDMI output: YES 1080p

Component video output: NO

Scart: NO

Audio output: YES Stereo phono and optical

Ethernet: YES RJ45 10/100

USB: YES USB 2.0 host x3

Video formats: MPEG1/2, MPEG4

SD/HD (AVC/H.264), WM9/

VC1 SD/HD, Xvid, DivX 3,4,5,6

Audio formats: MPEG-1/2, MP3,

WMA, AAC, MP4, M4A, M4V,

3GP, WAV, AC3, DTS (Bypass),

OGG Vorbis

Image formats: JPEG, BMP, TIFF,

PNG, GIF

Other formats: AVI, ASF, MP4,

MKV, ISO, VOB

Dimensions: 275(w) x 46(h) x

241(d)mm

Weight: 1.77kg

Features: 7-day EPG; AV jukebox;

Full HD; UPnP/DLNA 1.5 DHCP

+ Auto-IP; export to USB,

internal HD; wi-fi N; software

updating by USB; silent fan

3RD



HCC VERDICT

Emtec P800 HDD Movie Cube
£250 Approx

Price check: www.techradar.com/623303

Highs: Networkable, good format support; quality playback

Lows: Drive slot fits only Emtec drives

Performance: 1 2 3 4 5

Design: 1 2 3 4 5

Features: 1 2 3 4 5

Overall: 1 2 3 4 5

→ Specifications

Tuner: YES Dual analogue/digital

HDMI output: YES 720p/1080i

Component video output: YES

Scart: NO

Audio output: YES Stereo phono and optical/coaxial

Ethernet: YES Ethernet 10/100

USB: YES HDD, USB Device and

USB Host

Video formats: AVI, MPEG-1,

MPEG-2, MPEG-4, Xvid, DivX

3/4/5, VOB, DAT, IFO

Audio formats: MP2, MP3, WMA,

OGG, PCM, DTS, AC3

Image formats: JPEG, BMP

Other formats: Subtitle SRT, SMI,

SSA

Dimensions: 204(w) x 53(h) x

164(d)mm

Weight: 1.29kg

Features: PVR time-shifting; five

video recording modes;

firmware upgradeable;

Windows 98SE, ME, 2000, XP,

Vista, Mac OS X and later

compatible; internet radio; wi-fi

compatible with EMTEC USB

4TH



HCC VERDICT

Digital Vision DV-DTR1 GiGo
£70 Approx

Price check: www.techradar.com/614202

Highs: Uncomplicated; very easy to use

Lows: Limited connections and format support; poor build

Performance: 1 2 3 4 5

Design: 1 2 3 4 5

Features: 1 2 3 4 5

Overall: 1 2 3 4 5

→ Specifications

Tuner: YES Dual analogue/digital

HDMI output: NO

Component video output: NO

Scart: YES TV Scart with RGB,

CVBS, S-video and stereo

audio; VCR Scart in/out, stereo

audio in/out

Audio output: NO

Ethernet: NO

USB: YES 3 x USB 2.0

Video formats: YES MPEG-2 TS

Audio formats: None

Image formats: None

Other formats: None

Dimensions: 225(w) x 35(h) x

185(d)mm

Weight: 1.5kg

Features: Video resolution 720 x

576 max; 32 recording

programmes; 8-day EPG;

instant record from remote

control; subtitle support; 1/4

screen video in EPG; auto

channel scan; RF out with

loopthrough; automatic

software upgrade over air

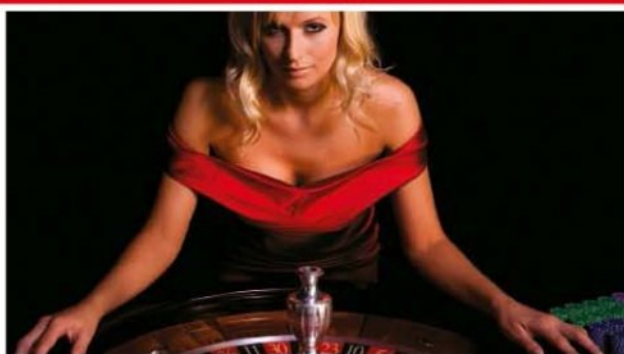


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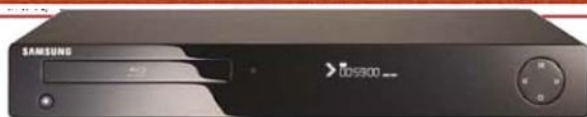
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- B:** Blue Thunder

- C:** The Hunt for Red October
- D:** Yellow Submarine

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'reproduction of colours remained bright and vivid throughout... detail and depth of field impressed too. It could only be top marks for this one.'
 What Hi-Fi? Sound and Vision

PLAYBACK

→ **Software highlights** 300 Men in capes demand respect from pushy Persians
WATCHMEN Dr Manhattan and friends break out of the comic pages **CORALINE** 3D freakathon
STATE OF PLAY Great Brit drama crosses the pond **KNOWING** Unlikely scientist Nic Cage in sci-fi fun
OUTLANDER Another swords, spaceship, and viking epic **AND MUCH MORE!**

Sci-fi stunna!

Battlestar Galactica: The Complete Series
 All-Region Blu-ray → Universal Playback

The hottest SF series in years makes the leap to hi-def in a mammoth 20-disc set. See page 96 to see if our experts think it lives up to the hype

HCC Ratings key

| | |
|-------------|-----------|
| Spartans | 1 2 3 4 5 |
| Romans | 1 2 3 4 5 |
| Trojans | 1 2 3 4 5 |
| Australians | 1 2 3 4 5 |
| Vegetarians | 1 2 3 4 5 |

Is Starbuck a Cylon?
Are you? Who knows?



Epic finds home on blu-ray

Top class space drama emerges on 20 Blu-ray discs from the ashes of the '70's TV show



HCC VERDICT

Battlestar Galactica: The Complete Series
Universal Playback → All-Region
Blu-ray → £160 Approx

We say: A brilliant sci-fi series on a brilliant Blu-ray box set. Brilliant!

Picture: 1 2 3 4 5

Sound: 1 2 3 4 5

Extras: 1 2 3 4 5

Movie: 1 2 3 4 5

Overall: 1 2 3 4 5

Battlestar Galactica is TV sci-fi done right. Forget the space opera and bumpy-headed aliens that typified the genre for decades, *BSG* goes back to sci-fi's allegorical roots and proves that it's possible to challenge and provoke audiences within alienating them (pardon the pun). Put simply, *BSG* is about as good as TV drama gets. Frakkin' unmissable.

Jim Hill: The picture quality of Season One's discs is a bit of a shock as they are much grainier than regular Blu-ray. But don't worry, the gravelly finish helps with the show's unique retro sci-fi/documentary style and blend the superb CGI sequences. The later seasons look cleaner, but it's not meant to have the polished production of *Star Wars*. Behind the grubby presentation, there's heaps of detail and the great props and costumes stand up to scrutiny in HD.

Curiously, a mix of AVC and VC-1 codecs are used for the different seasons. Careful examination of the image quality across the entire series shows little benefits for one over the other.

Steve May: *BSG*, from an audio perspective, appears a work in progress. The early shows (after the pilot) stand apart from other TV fare because they are so measured and dramatic. But as the seasons evolve, the sound mixing gains in audacity and invention. By Season Three, the 5.1 DTS-HD MA audio has evolved into something special.

Traditional orchestral drama is infused with surprising contemporary themes; music becomes an integral part of the Cylon reveal and composer Bear McCreary's arrangement of *All Along the Watchtower* takes on a haunting new resonance.

Anton van Beek: There's a plethora of goodies in this 20-disc set. For a full rundown check out our extended review on the HCC website. This BD box includes more commentaries, featurettes, deleted scenes, video diaries, extended episodes, and PiP behind-the-scenes material than you could shake Tricia Helfer's red dress at. The only omission is the continuous absence of the *Face of the Enemy* webisodes, which have yet to appear on any series release.



State of Play

Universal Pictures → Region 2
DVD → £20 Approx



What links the murder of a homeless man and the death of a congressional aide? Nothing, till reporter

Cal McAffrey (Russell Crowe) starts poking around and unearths a terrifying conspiracy. Based on the six-part BBC miniseries by Paul Abbott, this gripping thriller does a fine job of moving the action to the US and updating events, but, it still feels like a poor relation to the TV original. The anamorphic 2.35:1 transfer copes well with the dark streets and dimly-lit corridors, while the DD5.1 audio is pleasingly involving. The only extras are a 20min *Making of...* and a couple of deleted scenes. **AvB**

1 2 3 4 5

Ichi

Manga → All-Region
Blu-ray → £25 Approx



It seems there's just no stopping Zatoichi, the blind swordsman. The star of countless films and TV series in

Japan, the character was most recently brought to the big screen by Takeshi Kitano. *Ichi* is director Fumihiko Sori's gender-bending take on the concept, complete with hot sword-wielding blind chick. It's a lot of fun, and looks spectacular in HD thanks to a detailed and colourful AVC 1.78:1 encode. The TrueHD 5.1 Japanese language track is strong, handling both quieter moments and wall-to-wall action with ease – a shame the English subtitles are burnt into the image. **AvB**

1 2 3 4 5

The Boat That Rocked

Universal Pictures → R2 DVD
£20 Approx



A supreme cast of some of the very best comedy actors this side of the pond, and the addition of the

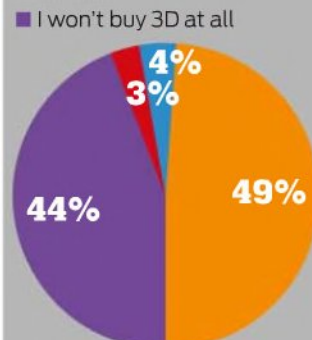
sublime Philip Seymour Hoffman, fail to save this risible attempt at humour from sinking rapidly. Richard Curtis drops a clanger by veering from the tried and tested waters of rom-com to tackle '60s' pirate radio, advocating rape as a comedic plot device along the way. The DD5.1 soundtrack captures the feel of the 1960s adequately, but the lack of extras (just deleted scenes and director/producer and cast commentary) is merely a further reason to avoid. **RH**

1 2 3 4 5

We asked you...

3D is coming – but what kind of system will you buy?

- 3D on BD but only in 1080p
- 3D on BD, and a half-res system if it's cheaper
- 3D from Sky, whatever the resolution
- I won't buy 3D at all



Results of poll from
www.homecinemachoice.com

A triumph of Greek tragedy

300 returns to Blu-ray with extras to rival the armies of Xerxes



One million of you, 300 of us? It must be time to rewrite some ancient history

300 purports to recount the story of the 300 Spartans who stood up to the might of the Persian Empire. By taking his cues from Frank Miller's hyper-macho comic books, director Zack Snyder's film deals less with history and more with oiled-up muscle men slicing each other up while shouting melodramatic platitudes. A triumph of violent style over substance, but good, silly, fun.

Rik Henderson: It's grainy and desaturated, but that's exactly what the filmmaker wanted. What's important here is that this VC-1 2.40:1 encode looks identical to the previous disc. As such it's a technically flawless presentation of the source and merits the same level of praise all over again.

Steve May: *300* is a blisteringly good example of audio visual synergy. Tyler Bates' dramatic, stomping score is a perfect match for Snyder's Miller-inspired visuals. It riffs like a metal band, with Greco-roman choral themes raising the hackles on the back of your neck. Its 5.1 Dolby

TrueHD mix is a thrilling example of hi-rez sonics. It plays like a series of bombastic demos with highlights toppling like those pesky Persians. The LFE channel is drafted into the front-line, and attacks with wave after wave of bass brutality. Every hack and slash is toe-tappingly choreographed. The intensity is exhilarating.

Anton van Beek: Arriving in book-style packaging (albeit with a thin cardboard sleeve with a Digital Copy disc stuck to the back), this new Blu-ray edition lives up to its 'Complete Collection' tag. The audio commentary, featurettes and deleted scenes, documentaries and webisodes from previous releases are present, plus the previously HD DVD-exclusive PiP bluescreen mode. But the best addition is *The Complete 300* viewing mode, which offers three extra tracks of PiP content, trivia boxes and Focus Point featurettes; the latter dealing with creator Frank Miller, the making of the movie and the historical events behind the story.



HCC VERDICT

300: The Complete Experience
Warner Home Video → All-Region
Blu-ray → £22 Approx (www.movietyme.com)

We say: A sensational Blu-ray update that is well worth double-dipping

Picture: 1 2 3 4 5

Sound: 1 2 3 4 5

Extras: 1 2 3 4 5

Movie: 1 2 3 4 5

Overall: 1 2 3 4 5



Calling all the heroes

Superheroes like
no others get a
revolutionary stateside
Blu-ray release





Page to screen: the original art and the film it inspired



Watchmen had a torturous journey to the big screen. Since it was first published in 1986, a number of filmmakers including Terry Gilliam and Darren Aronofsky had all been attached to adaptations of Alan Moore and Dave Gibbons' 12-part comic book series, only to see the project stall for various reasons, leading many to believe it was 'un-filmable'.

Trust Zack Snyder to prove them wrong. As he did with *300*, Snyder has gone to painstaking lengths to do *Watchmen* justice, recreating the comic down to the finest detail. The resulting film is a love letter to the original work.

In this extended 186-minute Director's Cut, it's also a roaring success. Most of the additions benefit the film, revealing emotional beats and motivations lacking in the theatrical cut. And even though Snyder overplays the violence and the slow-mo gets tired pretty quickly, it's still a smart, challenging and refreshing take on the over-flogged superhero genre.

Rik Henderson: After the problems with some of Warner's remastered hi-def catalogue titles and the obnoxious edge enhancement plastered all over the Blu-ray release of *The Dark Knight*, I wasn't sure what to expect from *Watchmen*. Happily, the company has learnt its lesson and delivers an eye-popping VC-1 2.40:1 encode.

Key to the success of the hi-def visuals is the impressive black level. Taking its stylistic cues from Dave Gibbons' original art, the film is packed with inky shadows and heavy blacks, all of which are present here and rendered flawlessly. The colour palette is primarily a subdued pastel affair (with the exception of Doctor Manhattan's bright blue glow) and is rendered succinctly, while textures and detailing are simply sublime.

Steve May: *Watchmen*'s 5.1 DTS-HD MA track is a polished kitchen sink of a mix, with numerous demo-quality sequences that you'll ache to play back to friends. Rorschach's prison break is an adrenalin-fuelled cacophony of energy, with percussive LFE and directional effects, while Dr Manhattan's teleportation is a rippling boom that seems capable of taking viewers with it. *Watchmen* is a movie that likes the sound of its own voice, but for the most part the centre-placed dialogue and throaty narration are intelligible and rounded.

The use of music is also a treat, with an eclectic mix of pop and rock rubbing shoulders

seamlessly with Tyler Bates' stirring orchestral score. Bates did a similar knockout job on Zack Snyder's *300*, and he's chasing Hans Zimmer as my favourite movie composer.

Anton van Beek: *Watchmen* makes its US Blu-ray debut as a pretty spectacular three-disc package.

Joining the 186-min Director's Cut of the film on Disc One is the new, much-hyped, Maximum Movie Mode feature. Showing what the Blu format can do when it comes to interactive bonus content, the feature plays the movie with the usual mix of picture-in-picture video and audio commentary. However, it also serves up scene-specific links to photo galleries, comic book comparisons and, best of all, via seamless branching. This lets Snyder pause the film while you're watching it and wander on-screen to point out things of interest and discuss how shots were made. It's not perfect, though – I'd have liked even more of the Snyder walk-ons, for one thing.

Of course, for those who fancy checking out the Focus Point featurettes without interrupting the flow, there are direct links to all of them on the Special Features menu. Fans should note: as the UK release only features the theatrical cut of the film, the Maximum Movie Mode is absent on the Region B *Watchmen* Blu-ray.

Also on Disc One is the now standard link to Warner's BD-Live centre. The company is promising exclusive content for this title (unavailable at the time of writing) as well as the ability to connect to Facebook and organise group screenings of the film. If that's your bag.

Over on Disc Two you'll find *The Phenomenon: The Comic That Changed Comics*, a rather big-headed retrospective look at the impact of the original *Watchmen* publications; *Real Superheroes*, *Real Vigilantes*, a documentary looking at vigilantism throughout American history; the *Mechanics: Technologies of a Fantastic World* featurette looking at the plausibility (or not) of the science and super powers seen in the film; and the music video for My Chemical Romance's *Desolation Row*. All of the extras on Disc Two are presented in 1080p.

Finally, Disc Three houses a Digital Copy of the film's theatrical cut. However, because of rights issues and the download requirements, this appears to be unusable outside the US. Bugger.

The Minutemen: First generation superheroes (top)



HCC VERDICT

Watchmen: Director's Cut → Warner Home Video All-Region Blu-ray → £22 Approx (www.movietyme.com)

We say: Zack Snyder's superhero masterpiece does everything right on its US Blu-ray debut

Picture: 1 2 3 4 5

Sound: 1 2 3 4 5

Extras: 1 2 3 4 5

Movie: 1 2 3 4 5

Overall: 1 2 3 4 5 >



Coming
soon...

The Collection 2009

*The world's finest hi-fi
The UK's best reviewers*

Not so sweet Coraline

Classic fairytale with all the schmaltz spat out

Coraline is the latest stop-motion animated feature from director Henry Selick, the man behind *A Nightmare Before Christmas*. This time he's turned to a novel by noted fantasy author Neil Gaiman, and the result is a dark, disturbing and marvellously grotesque modern fairytale. Bored and neglected by her workaholic parents, Coraline stumbles into an alternate world where the button-eyed 'Other Parents' give her the love and attention she always craved. But as you might expect, it all comes at a terrible price...

Rik Henderson: There's only one word for *Coraline*'s VC-1 1.85:1 encode: flawless. Colours are extraordinarily vibrant, blacks are inky and the fine detailing and textures evident throughout the film highlights the beautiful animation.

The disc also serves up an anaglyph 3D version of the film (with a generous four pairs of 3D glasses). Not surprisingly, the picture here isn't quite as spectacular, and looks rather muddy and lacks sharpness. The 3D itself works reasonably well, although anaglyph technology will never be anything more than a gimmick.

Steve May: While not the most dynamic mix you'll ever hear, there's still a lot to love about *Coraline*'s DTS-HD Master Audio 5.1 soundtrack. The front of the soundstage is wonderfully expansive, while subtle use of the surrounds ensures the creation of authentic acoustic locations for the characters to inhabit. Perhaps the most striking element of all in this lossless mix is the sheer clarity and rich tonality of the audio, enabling you to pick out each individual instrument used in Bruno Coulais' haunting score.

Anton van Beek: This two-disc set follows the pattern established by recent Disney Blu-ray releases, delivering both Blu-ray and DVD copies of the movie. The BD-50 disc houses both 2D and 3D 1080p versions of the film, plus a commentary by director Henry Selick and composer Bruno Coulais, a ten-part *Making of...* documentary, six deleted scenes with intros by the director, *Creepy Coraline* and *Voicing the Characters* featurettes, D-Box Motion Code, BD-Live Content (including an additional interview with the director) and a trio of U-Control Modes (Picture-in-Picture, Tours and Voice Sessions, and Picture-in-Picture Animatics).

The bonus DVD has the film in standard definition, accompanied by the audio commentary and a Digital Copy.



HCC VERDICT

Coraline: 2-Disc Collectors Edition → Universal → All-Region
Blu-ray → £21 Approx (www.movietyme.com)

We say: A creepy animated treat for kids of all ages served up on a spectacular hi-def platter

Picture: 1 2 3 4 5

Sound: 1 2 3 4 5

Extras: 1 2 3 4 5

Movie: 1 2 3 4 5

Overall: 1 2 3 4 5



A Bug's Life
it ain't –
though a few
of them
get eaten

Torchwood: Children of earth

Zentertain Ltd → Region B Blu-ray
£29 Approx



Until now this *Doctor Who* spin-off has been a bit of a stinker. Clearly thinking that 'adult'

sci-fi means loads of sex and swearing, it actually felt less mature than its kid-friendly parent. However, this latest five-part story is a revelation. It's flawed in places, but also the most challenging, provocative, exciting and adult take on sci-fi made in the UK in years. Just as good are the detailed VC-1 1080i encodes and the boisterous DTS-HD HR 5.1 sonics. Extras include an HD Setup Guide and a 32min behind-the-scenes doc. **AvB**

1 2 3 4 5

Dr Who: Planet of the dead

Zentertain Ltd → Region B Blu-ray
£16 Approx



This rather lacklustre one-hour Easter Special for David Tennant's Doctor is the first made in

hi-def. In it, the Doctor and a busload of civilians (including Michelle Ryan's Catwoman/Lara Croft-hybrid Lady Christina de Souza) are transported to a world ravaged by rubbish flying CG beasts – like a lo-fi *Pitch Black*. If the story's not memorable, the 1080i VC-1 visuals are nice and the dynamic DTS-HD High Resolution 5.1 soundtrack outstrips the DVD's Dolby 2.0 mix. A 57min *Doctor Who Confidential* and HD Setup Guide make up the extras. **AvB**

1 2 3 4 5

Dragonball Evolution

20th Century Fox → Region B
Blu-ray → £29 Approx



Both critics and audiences avoided this stinker at cinemas, and you should do the same

with this Blu-ray. Based, loosely, on the popular *Dragonball* anime series, this live-action Hollywood outing stars Justin Chatwin as high school kid Goku, who is running around the world collecting Dragonballs (?) when the evil Piccolo returns from 2,000 years in prison. Fluctuating image quality plagues the AVC 2.40:1 encode but at least the DTS-HD MA 5.1 audio kicks ass. Lame extras include a Blu-ray 'game', deleted scenes and featurettes. **MC**

1 2 3 4 5

Monsters, Inc

Disney Home Entertainment →
All Region Blu-ray → £24 Approx



In a surprise move, Pixar's furry frightener makes its Blu-ray UK debut ahead of the US, and

like its previous hi-def outings, it's gorgeous. We thought the old DVD was reference quality, but this new AVC 1.85:1 blows it away. Improvements in colour accuracy and detailing are mind-blowing. A playful and dynamic DTS-HD MA 5.1 mix keeps the speakers busy, while ample extras across the two-discs include almost all of the old DVD goodies (a handful upgraded to HD) plus a new interview with the creators and a look at the Monstropolis ride in Japan. **MC**

1 2 3 4 5

Too much lighter fuel on the barbie, again



The nutty professor

It's the end of the world and, remarkably, only Nicolas Cage knows it

Knowing is the kind of sci-fi claptrap that's enjoyable on some basic level, despite being constantly made aware of its many, many flaws. Nic Cage plays a professor of astrophysics whose young son brings home a scrap of paper taken from a time capsule buried at his school 50 years ago. The paper is covered in seemingly random numbers, but super-scientist Cage works out that they prophesise major disasters. And it seems there are bigger ones on the way!

Rik Henderson: One thing's for sure about this Blu-ray is that it delivers reference quality visuals. Presented at the original 2.40:1 aspect ratio, the AVC MPEG-4 encode is practically flawless. Shot entirely digitally, the film arrives on BD with an immaculate image that's free from unnecessary grain and video noise. Colour reproduction is accurate and the incredible detailing gives the image real depth. The only downside is that the exceptional clarity sometimes highlight some of the less-than-special CG effects, such as the subway crash around the hour-mark.

Steve May: Who'd think the end of the world is such fun? *Knowing's* blisteringly sharp 5.1 DTS HD Master Audio soundtrack misses no chance to thrill and chill. The whispering angels chitter 360 degrees, while the LFE channel thunders for attention during the disaster sequences. Marco Beltrami's score sounds dramatic and sensational, but he can't resist cheap shot shocks. Lull the audience with quiet tension and then blast them with a foghorn when the action cranks up.

A staple technique in '80's slasher movies and used ruthlessly here.

Anton van Beek: For an epic film, the extras are slight. The only one of merit is the audio commentary where director Alex Proyas and an unnamed other discuss making the film and its themes. The *Knowing All: The Making of a Futuristic Thriller* featurette is too brief and shallow to cover any new ground. *Visions of the Apocalypse* looks at apocalyptic myths, and the disc finishes with the trailer six 576p TV spots.



HCC VERDICT

Knowing
E1 Entertainment → Region B
Blu-ray → £25 Approx

We say: Spectacular hi-def visuals and audio. Leave your brain at the door

Picture: 1 2 3 4 5

Sound: 1 2 3 4 5

Extras: 1 2 3 4 5

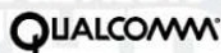
Movie: 1 2 3 4 5

Overall: 1 2 3 4 5

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The Haunting in Connecticut

Entertainment in Video → R2
DVD → £20 Approx



The latest spook-fest with the dreaded tag 'Based on a true story' is another sub-par *Amityville*

Horror wannabe. It's got the usual spooky noises, dysfunctional family, creepy basement – and a ludicrous invented backstory that undermines the 'true' one. Despite a solid cast, the story's tired, predictable and not even scary. The anamorphic 2.35:1 transfer, however, is nicely detailed and the DD5.1 audio copes well with the spooky noises. Extras include deleted scenes and featurettes about the production and the events behind it. **MC**

1 2 3 4 5

Hellraiser

Anchor Bay → Region A/B Blu-ray
£20 Approx



A landmark horror film of the 1980s, Clive Barker's seminal shocker *Hellraiser* still works its way under

your skin where most rivals fail. Shot on a fairly low budget, the hi-def imagery won't blow you away, but the AVC 1.85:1 encode has enough fine detailing and intrinsic grain to keep fans happy. The Dolby TrueHD 5.1 mix is rather front heavy, and it's a shame the original stereo audio is missing. A pop-up trivia track and interviews with actors Ashley Laurence and Andrew Robinson are new, while many of the old DVD extras are here, Barker's commentary and interview are oddly absent. **AvB**

1 2 3 4 5

The Coffin Joe Collection

Anchor Bay → Region 2 DVD → £40 Approx



The films of Brazilian exploitation auteur José Mojica Marins have been nigh-on impossible to track

down in the UK. But this five-disc eight-movie set makes some amends collecting *At Midnight I'll Take Your Soul*, *This Night I'll Possess Your Corpse*, *The Strange World of Coffin Joe*, *Awakening the Beast*, *The End of Man*, *The Strange Hostel of Naked Pleasures*, *Hellish Flesh* and *Hallucinations of a Deranged Mind*. The AV quality is indifferent, but it's just a treat to get hold of them. The sole extra is a 65-min doc about the man and his films. **AvB**

1 2 3 4 5

Embodiment of Evil

Anchor Bay → All-Region
Blu-ray → £20 Approx



Four decades after 1967's *This Night I'll Possess Your Corpse*, Coffin Joe's quest for the perfect woman

ends with this lurid Brazilian shocker. Released from jail and reunited with his servant Bruno, Joe's soon up to his old tricks with a renewed enthusiasm for torture and mutilation. The AVC 1.78:1 encode is a pleasant surprise, with excellent colour and detailing. Likewise, the Portuguese-language Dolby TrueHD 5.1 and LPCM 2.0 mixes are involving and atmospheric. A 32min *Making of...* and the trailer are the only extras. **AvB**

1 2 3 4 5

The Passion of the Space Viking

At last, a movie that combines spacemen, vikings, and dragons! Not well, admittedly

Outlander is one of those daft and derivative sci-fi movies that has such an obvious and intriguing hook that you can't help but enjoy it. A spacecraft crashes in Norway during the year 709 AD, when Vikings rule the country. The pilot (James Caviezel – last seen playing Jesus in *The Passion of The Christ*) is captured, but he wasn't alone. A creature was also on board the craft, and is now running loose in the countryside killing anyone who crosses its path. So the spaceman and Vikings join forces to slay this 'dragon'.

Rik Henderson: Whether endemic to the source material or not (we have a feeling it may have been a deliberate stylistic decision), contrast levels appear boosted throughout *Outlander's* AVC 2.40:1 encode. The upshot is that the many night sequences lack the deep inky blacks you expect, instead offering up

dull greys. That said, colour presentation is very strong throughout, as shown by the first full appearance of the glowing monster in Chapter 9.

Steve May: The very least that can be said about *Outlander* is that it offers mythic levels of LFE. During the opening reel's space craft crash, ripples of deep bass throb across the soundstage and it really sounds like an alien ship is coming in for an untidy landing. If you want to check your sub's working at optimum, this is probably a good way to do it. By this criterion, the DTS HD MA soundtrack is exciting, but I never really felt

immersed by the 5.1 mix. Listened to at volume, it's a bit like being beaten across the head with Thor's hammer. It's loud, visceral but not particularly artful. But then I guess that's probably the point.

Anton van Beek: This Blu-ray of *Outlander* offers an identical set of bonus features

to its DVD counterpart (down to the bonus video material at 480p). Still, if rarely revelatory, most of the extra content is interesting. A commentary by the director and co-writers does a thorough job of explaining the film's unusual production history, along with 27 deleted/extended scenes (41mins), five short visual effects demos (9mins), ten animatics (24mins), five art galleries, the theatrical trailer (2mins) and *Two Worlds, One Film: The Making of Outlander* featurette (17mins). Not bad.



'What now? Father Christmas on skates?'



HCC VERDICT

Outlander → Momentum
Pictures → Region B
Blu-ray → £25 Approx

We say: A fun, if undemanding, sci-fi reworking of *Beowulf* on a solid, unspectacular Blu-ray disc

Picture: 1 2 3 4 5

Sound: 1 2 3 4 5

Extras: 1 2 3 4 5

Movie: 1 2 3 4 5

Overall: 1 2 3 4 5

SEVENoaks

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Panasonic Viera TX-P46Z1 WirelessHD Plasma TV

Sitting at the top of Panasonic's new Viera range this 46" super-thin plasma television, complete with separate media box, streams 1080p24 wirelessly allowing full HD Blu-ray video to be displayed with no wires whatsoever. With its impressive performance and comprehensive connectivity, the new Z1 is a big step forward in TV design.

Samsung UE40B7020 LED-backlit TV

At only 2.9cm deep, Samsung's UE40B7020 is breathtakingly thin. On its LED-backlit screen, vivid details are captured in every frame. Picture edge-blur removed and full, robust colour restored to each pixel. It's a remarkable feat of design, on or off.



Pioneer KURO PDP-LX6090 Plasma TV

Regarded by many as the best TV in the world bar none. This 60" TV, along with the smaller 50" model, produce remarkable black levels, detail and unsurpassed colour fidelity. Even images from the digital TV tuner look good when blown up to the whole 60" size.



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Sim2 Grand Cinema HT380

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BLU-RAY DISC PLAYERS



Panasonic DMP-BD80

The 'BD80' from Panasonic blends comprehensive features with top-drawer picture and sound quality.



Pioneer BDP-320

Enjoy Blu-ray disc as it should be: the BD-Live BDP-320 delivers high-end picture quality.

Sony BDP-S550

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Sony STR-DA2400ES

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Denon AVR-1910

Part of Denon's new 10 series AV receivers. Described by What Hi-Fi? Sound and Vision magazine as "Hugely entertaining... A sensational machine".



Onkyo TX-SR607

Onkyo raises the bar in the competitive world of home cinema with its TX-SR607 which features Dolby's new 'height' channel processing.



Yamaha

Yamaha's new 2009 range includes five new AV receivers, a home cinema soundbar, and two TV stands with built-in surround sound.



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WHAT IF-FIT
★★★★★
09/2009

KEF KHT3005SE

Award-winning 5.1 speaker package available in high gloss black or silver.



WHAT IF-FIT
★★★★★
09/2009

B&W

685 Theatre
Smart, original styling coupled with impressive build - this system looks every bit as good as it sounds.



WHAT IF-FIT
★★★★★
07/2008

**Q Acoustics 1010i 5.1**

Smart styling complements the Q Acoustics' award-winning performance.

WHAT IF-FIT
★★★★★
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Feedback

Got an axe to grind? Want to comment on current technology? Need to share? **HCC** is here to help

US packaging sucks!

Hello, I'm in the US and the packaging for the *Battlestar Galactica* Blu-ray set over here is flat-out terrible. I really want to import the UK set based on the impressions your website posted, but I was wondering if there was anyway you can check to see if the set was region-free?

A, via email

No worries, er, 'A'. We can confirm that the UK Blu-ray edition of *Battlestar Galactica: The Complete Series* is region-free – so you can get importing. And yes, the UK packaging is sooo much better.

3D is a turn off

I read the news on your website that Sky is launching a 3D channel some time next year.

What is the point?
No one will have



a 3D-ready TV to watch it on! Surely Sky would be better trying to launch when 3D BDs are more widely available.

Also, do you know who will be making 3D-ready TVs and how much they will cost?

Sam Mitchell, via email

The current enthusiasm for 3D seems to be driven mainly by the prospect of a load of Hollywood productions in 3D including James Cameron's *Avatar*, Tim Burton's *Alice in Wonderland*, *Tron 2.0* and a re-release of the *Toy Story*

movies. But getting 3D into cinemas is only the first step. Dolby, Hyundai, Mitsubishi, Nvidia, Phillips, RealD, Samsung, Sensio, Novo and Vuzix, among others, are working on domestic 3D technology, but there's



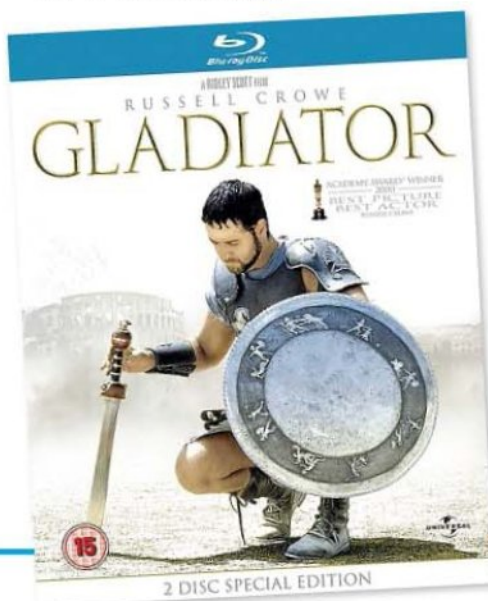
Red and black issues

A few comments from one keen reader, relating to your review of the new Panasonic wireless TX-P46Z1.

First of all, design. It's not a good idea to have those black bars at each side, since, all too obviously, it will look like that dreaded 'does not quite fit the screen' in some transmissions. Secondly, is silver a good idea? You are rather dismissive of the usual black, which you refer to as 'designed by undertakers'. Agreed, here and there are a few naff designs around (not Panasonic), but all one needs with a modern TV screen is a simple surround neatly designed. Black has the obvious advantage of making the picture stand out more, as in a darkened cinema. Silver or white is bad thinking in my view!

Thirdly, you state that 'plasma is far better at displaying true, deep reds than LCD'. Not true! I am an artist as well as a

keen videographer, and certainly know all about reds in a palette. I have a Panasonic LCD TV with x.v.color, and



professional Sony three-CMOS camcorder. On such HD programmes as, for instance, *Coast*, where one presenter often wears a brilliant very red jacket, it is brilliant and very red, not orange! I have also tried videoing, and playing back on an HDV x.v.color deck, red peppers, tomatoes, London buses, and a brilliant red car. All are reproduced perfectly. By contrast, several plasma screens I've seen have an orange tint in reds.

Roger Payne, via email

The HCC team is sometimes split on AV aesthetics, and you may be right that black is the only sensible option while you're watching. Unfortunately, black-cased TVs do look a bit funereal when they're inactive, and lots of people (or their wives) seem to prefer a choice of a lighter colour.

Sign up to HCC online!

Don't be an Alan Smithee! Joining *Home Cinema Choice's* online community is free, fast and fun

On the home page of www.homecinemachoice.com, scroll down the right-hand side of the page until you see the Login box. Click the *Join Here* button, choose a username and then create your profile. You can upload an image to represent you online and use your signature to tell fellow AV fans about your own system automatically every time you post. Joining the big AV debate online has never been easier!



no telling who will actually bring a system to the UK market or when it will appear. The cost of a 3D-ready TV shouldn't be enormous; all it really needs is a polarised filter over the screen.

One worry comes from comments by ex-Sony guru Peter Wilson, now Director at High Definition & Digital Cinema Ltd., and how they relate to Sky's 3D broadcast plans. Sky has previewed 3D broadcasts using its existing HD box and polarised glasses, and plans to shoot its own material, mainly live sports. Wilson was quoted recently as saying that while movie-makers could spend time optimising images in post-production, live 3D TV events ran the risk of inducing nausea. 'During live 3D production it's

likely that viewers will inadvertently be presented with images requiring their eyes to diverge, or for one to look up while the other looks down, neither of which is a comfortable experience,' he said. So we might soon be sick of 3D in more ways than one.

Bigger is better

In response to the piece about drop-down screens (*Insider*, HCC #171) – a 46in-50in screen is fine for TV-viewing/upscaling, but just look at the faces on the grandkids whilst watching *Cars*, etc, on a Full HD 1080p 90in projector screen. It's enough to convince you!

Jezzer, via email

'Bigger is better' is indeed the principle we live by, but we don't all have the space for a dedicated cinema room, and some just draw the line at chucking out the sofa to fit in a 90in screen.

DVD playback

Have you guys ever done a comparison between a DVD player playing DVDs and a computer which stores them and plays them back via HDMI?

Ian Bennett, via email

We have done some testing of media centre PCs, by transcoding our standard DVD test signal discs into digital formats. There was some support for our assumption that a digital file would exhibit low video jitter, as it doesn't rely on the moving parts of an optical disc system; but then, as you would expect it also seems that PC systems suffer from more system noise than DVD players. So you couldn't

say that one was better than the other. We have yet to do these tests with a high-end video streamer, which we assume would combine the best features of a PC and a DVD player.

Freeview HD aerial

Any word if Freeview HD will work fine with existing Freeview-compatible aerials?

I live in a rented flat so cannot get Freesat, but would be all over a Freeview HD box and/or HDD + DVD/BD recorder. Anonymous, via the website

Freeview HD would certainly work with an existing Freeview compatible aerial. There's a very useful website at www.paras.org.uk which debunks a lot of myths about digital reception. For instance, it points out that strictly speaking there's no such thing as a 'digital' aerial at all.

Freeview HD tests are currently running with a group of around 450 trialists. Open transmissions will begin on December 2nd with one transmitter, Winter Hill, covering Liverpool and Manchester, and roll-out is due to be completed by 2012. Freeview HD is set to be installed in the Crystal Palace transmitter in December, then four other transmitters covering urban areas by Spring 2010. London as a whole is due to get Freeview HD by 2012, in time for the Olympics. Of course, you'll need a new Freeview HD box for all this, and initially there will be only four channels – BBC, ITV, Channel 4 and Channel 5, possibly broadcasting in 720p resolution (though the trials are running in 1080i). A fifth channel is planned after 2015.

Obviously FreeviewHD+ PVRs will be a hot item, but it's too early to say who will manufacture them or how much they are likely to cost ●

Write to Letters, Home Cinema Choice, Future Publishing, 2 Balcombe Street, London NW1 6NW, or email us at hcc@futurenet.co.uk. Due to the volume of letters we receive we cannot guarantee to print/answer them all.

From the website

You views on Lexicon's imminent BD deck, and Sky 3D...

'This player is based on the Oppo BDP-83, presumably the main difference being that this should have much better DACs.'

Posted by... YellowSphere

'Better DACs? You'd hope so at \$499 for the Oppo, vs \$3,499 for the Lexicon, especially where the layout and the video processing at least look identical...!'

Posted by... DoubtingThomas

'What a load of toodge, this player costs roughly £3K – probably £5K by the time the high-end glitterati dealers add their (alleged) knowhow into the mix. Based on a machine that costs a fraction of the cash, this one is for thick people with money. The rest of us with a few bob will spend our cash more wisely.'

Posted by... Captain Jack Sparrow

'Do we really need a player that'll spin DVD-Audio discs and Super Audio CD any more? I'd have thought Blu-ray audio-only was the clear way forward.'

Posted by... Graeme

'So the end result is we have a 'Sky 13D' channel that runs 3D preview clips all day long?

This whole 3D is a farce. Who is filming for it? What TV channels will support it? Is the BBC magically going to start replacing all of their recently-acquired HD cameras with 3D? No.'

Posted by... Alan Smithee

'No, but there'll be Sky Movies 3D – look at all the movies coming out in 3D right now, I wouldn't be surprised if there's a big push on this when Sky gets the rights to show *Avatar* – and I think I read Sky is shooting some sports in 3D.

I would imagine that regular TV will take a long time to go 3D (longer than for HD) but movies would be the driver.

And don't forget that people like George Lucas are talking about going back and making their previous films (i.e. *Star Wars*) into 3D (although how effective will that be when they weren't shot in 3D to start with?).'

Posted by... Cerebros

Want to get something off your chest? Join the debate online at www.homecinemachoice.com

Personal opinion notwithstanding, the reason why reds on LCDs have traditionally been muted or suffer from an orange tint is a side effect of CCFL backlighting. White light shining through a red pixel is always going to alter its deepness (in the same way that blacks can look grey). Of course, more recent LCD TVs have advanced filters which lessen this effect, hence better reds on certain screens.

Winner: Star Letter-writer Roger Payne wins a copy of *Gladiator: 2 Disc Special Edition* on Blu-ray courtesy of Universal Pictures UK. It's available to buy from Sep 7, priced around £25.

How we test

Home Cinema Choice's hardware reviews combine the subjective opinion of our seasoned reviewers with hard technical data.

Chris Jenkins explains how the HCC Tech Labs work

HCC reviews tend to be a mixture of subjective opinion and objective data. While we value the subjective opinions of our highly experienced reviews team, we like to blend and balance their opinions with objective measurements. The HCC Tech Labs have been measuring AV equipment for nearly 20 years. It was originally conceived to evaluate the performance of VCRs and CRT TVs, and it is now routinely testing Blu-ray players and HD displays.

Interestingly, much of our first generation hardware is still in use (we maintain an irrational fondness for an oscilloscope used to determine the onset of clipping on amplifiers), although our more venerable hardware is now supplemented by new software and measurement methodologies. One thing remains unchanged though: our commitment to supply you with the best possible buying advice.

Virtual Tour

Our Tech Labs consist of two main facilities: a Viewing Room, and a Test Lab.

The Viewing Room is used mainly for testing TVs, projectors and speakers and has been designed to reproduce the conditions that are found in a typical mid-range home cinema setup. It was created by award-winning custom installers Pounds (www.poundstv.co.uk), and is completely light-proofed. While it is not designed to be sound-proof, it has been skinned in Acoustiblock and has been acoustically treated and tuned by the experts at RPG (www.rpg-europe.co.uk), using custom absorbers and diffusers. The room features multiple HDMI, component video and audio cable runs, as well as analogue and digital TV and satellite feeds, and has a resident 7.2

speaker system. Multiple screens can be fed the same source material simultaneously, courtesy of a Gefen 2-in-4-out HDMI switcher/splitter, for screen shootouts.

Number crunching

The Test Lab is used mainly for number-crunching DVD/Blu-ray players and amplifiers. It's equipped with two industry-standard systems: a Tektronix VM700 video data analyser, and a Miller Audio Research audio analysis suite. Using standard test signals from discs and signal generators, these two systems are used to measure factors such as audio and video signal jitter, frequency response and output power. These give us a good general idea of the component quality, processing power and overall performance of players and amplifiers.

Professionals at large

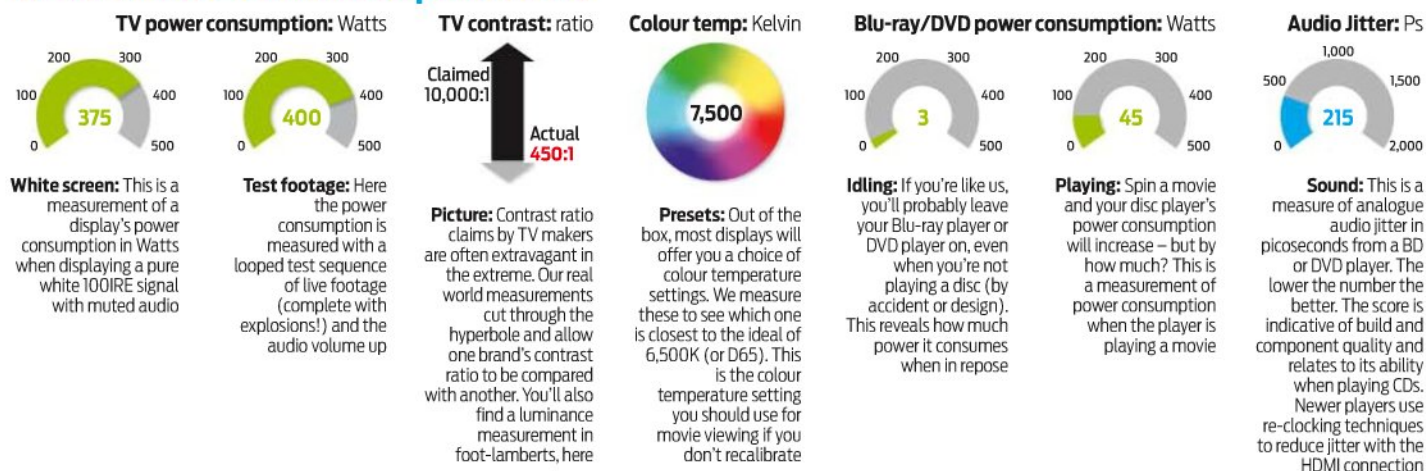
Over the years, our testers have been trained in calibration and testing techniques by the ISF, Tektronix, the Home Acoustics Alliance and other industry bodies. In short, when you read a review in HCC, you can be sure that the reviewer's subjective opinion is backed up by objective scientific lab testing.

Understandable and useful

One of our pledges is to present information that is both understandable and useful, for example, exposing the hype perpetrated by some makers of plasmas and LCD TVs regarding contrast ratios. To determine real world contrast, as well as measuring colour temperature presets, we employ a Sencore VP401 signal generator alongside a PC running Datacolor Colorfacts software with a Spyder 2 sensor. We use the Sencore signal generator and our own discs to generate standard TV



Tech Lab tests explained





Test bench:

Equipment from the likes of Snell & Wilcox, and Techtronix allows us to compare all manner of kit

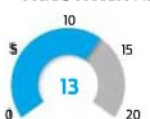
signals. Colorfacts analyses the colour and luminance performance of TVs and projectors, giving us information in areas such as contrast ratio, colour temperature and luminance.

Playback

Increasingly, you've been asking for more information on power consumption, and so we've now moved these

results to a headline position on our tests. We've also developed a more graphical presentation (key below) of some of the data we produce, which should make the facts more relevant and digestible. Not all the data we generate is published (frankly, you'd be bored) but all of it goes into the melting pot of opinion. While one key reviewer is bylined for our tests, as many as four team players will contribute to our findings ●

Video Jitter: Ns



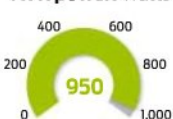
Vision: This is a measure of video jitter in nanoseconds from a BD or DVD player. The lower the number the better. The score is indicative of build and component quality. We also present figures for Chroma Crosstalk (another quality indicator) and frequency response @5.8MHz

Loading: Boot/Java

Boot speed & tray eject
15s
Tray in to main BD menu
45s

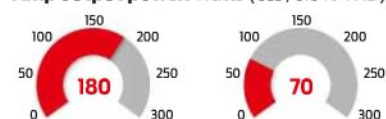
Disc loading & Java: Blu-ray players can be notoriously slow to load and play discs, thanks to the DRM and Java content of BD software. These timings are crucial to the user experience – naturally faster is best

AVR power: Watts



Powered: When you fire up that big AV receiver to watch a new movie you may be surprised to learn just how much current it's drawing. This is one of two measurements we take for AV amp power consumption. The other is when the AVR is powered up but idle

Amp output power: Watts (8Ω, 0.5% THD)



2-channel 8Ω: So just how heroic is that AVR you've been saving for? Putting aside paper claims, we measure its output in two-channel stereo mode. Also noted here is a figure for Total Harmonic Distortion



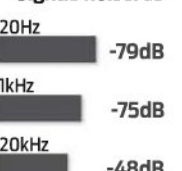
5-channel 8Ω: In most cases, an amplifier's muscle will be diminished when it runs in multichannel mode. We push the product to extremes in a 5.1 configuration to see how much grunt is available with all channels driven

Pure power: Watts



Fidelity firewall: This is our measurement of power untainted by distortion (typically 0.052THD, 8Ω, 1kHz). It's an indicator of both power output and component quality

Signal/noise: dB



S/N tests: These amp measurements reveal the ratio of noise to signal at a specific frequency. Readings taken at low, mid and high points help determine imaging clarity and sonic character

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QED Reference HDMI-SR Cable

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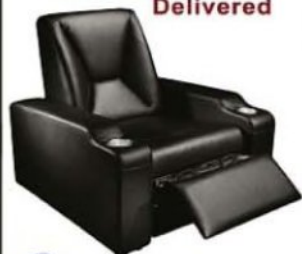
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£5.40 per / metre ★★★★★

QED Silver Anniversary XT Bi-Wire

£10.80 per / metre ★★★★★

QED Revelation Speaker Cable

£13.50 per / metre ★★★★★

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£20.25 per / metre ★★★★★

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£25.00 per / metre ★★★★★

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→ **Buying Guide** **BEST EVER LCD TV** The top performing LCD screens in the UK revealed **HI-DEF PLAYERS** Looking for a Blu-ray deck? We help you choose **PLASMA POWER** Your guide to the ultimate bigscreen TV **ROCKIN' RECEIVERS** The best specs and latest codecs **SUPREME SPEAKERS** Need a 5.1 package? We name the best! **PLUS** subwoofers, projectors, PVRs & more...



HCC Ratings key

| | |
|--------------------|-----------|
| Officially awesome | 1 2 3 4 5 |
| Essential purchase | 1 2 3 4 5 |
| Does the job | 1 2 3 4 5 |
| Disappointing | 1 2 3 4 5 |
| Don't touch it | 1 2 3 4 5 |

LCD TV

Best on test...



SONY
46in → KDL-46Z4500
£2,300 Approx

1 2 3 4 5

Much-hyped 200Hz Bravia LCD impresses in other areas, too

Highs: 200Hz aids motion clarity without causing serious glitching; beautiful build
Lows: Limited calibration tools

→ Specifications

HD Ready: Yes (up to 1080p)
1920 x 1080 resolution
No. of HDMI inputs: 3
No. of Scart inputs: 2 (2 RGB)
No. of component inputs: 1
PC input: 1
Digital tuner: Yes (and CI slot)

Tested: Issue 166
For price check visit:
www.techradar.com/486975



SAMSUNG
32in → LE32B650
£650 Approx

1 2 3 4 5

Net-savvy 32incher is a real bargain buy

Highs: Huge feature count; excellent HD pics; sexy design
Lows: SD performance and audio is average

→ Specifications

HD Ready: Yes (up to 1080p)
1920 x 1080 resolution
No. of HDMI inputs: 4
No. of Scart inputs: 2 (1 RGB)
No. of component inputs: 1
PC input: 1
Digital tuner: Yes (and CI slot)

Tested: Issue 172
For price check visit:
www.techradar.com/613346



SAMSUNG
40in → UE40B7000
£1,250 Approx

1 2 3 4 5

Superslim, edge-lit LED screen looks the business

Highs: Superb HD images; multimedia functions; design
Lows: Poor audio performance; no wi-fi adapter included

→ Specifications

HD Ready: Yes (up to 1080p)
1920 x 1080 resolution
No. of HDMI inputs: 4
No. of Scart inputs: 1 (RGB)
No. of component inputs: 1
PC input: 1
Digital tuner: Yes, (& analogue & CI slot)

Tested: Issue 171
For price check visit:
www.techradar.com/604142



PHILIPS
56in → Cinema 21:9
£4,500 Approx

1 2 3 4 5

A groundbreaking ultra-widescreen TV

Highs: Unique, inspired aspect ratio; detail presentation
Lows: Limited black levels; uneven CCFL backlighting

→ Specifications

HD Ready: Yes (up to 1080p)
Native resolution: 2560 x 1080
No. of HDMI inputs: 5
No. of Scart inputs: 2 (2 RGB)
No. of component inputs: 1
PC input: 1
Digital tuner: Yes, plus CI slot

Tested: Issue 171
For price check visit:
www.techradar.com/607940



PHILIPS
42in → 42PES0001
£1,800 Approx

1 2 3 4 5

Philips' modular TV drops Ambilight but doesn't suffer

Highs: Sexy form factor and quality build; eye-catching images
Lows: Complex menus

→ Specifications

HD Ready: Yes (to 1080p24)
1920 x 1080 resolution
No. of HDMI inputs: 3
No. of Scart inputs: 2 (1 RGB)
No. of component inputs: 1
PC input: 1
Digital tuner: Yes (& analogue & CI slot)

Tested: Issue 168
For price check visit:
www.techradar.com/579400

Also Recommended...



LG
32in → 32LH4000
£460 Approx

1 2 3 4 5

Budget offering from LG delivers where it counts

Highs: Exceptional value; good design, connectivity and images
Lows: Black levels; restricted viewing angle; audio is average

→ Specifications

HD Ready: Yes (up to 1080p)
1920 x 1080 resolution
No. of HDMI inputs: 3
No. of Scart inputs: 2 (2 RGB)
No. of component inputs: 1
PC input: 1
Digital tuner: Yes (and CI slot)

Tested: Issue 172
For price check visit:
www.techradar.com/613314



SONY
37in → KDL-40W5500
£900 Approx

1 2 3 4 5

Excellent LCD all-rounder

Highs: Impressive dynamic contrast and smooth motion; networking features
Lows: Styling is bland; AppliCast needs more content

→ Specifications

HD Ready: Yes (up to 1080p)
1920 x 1080 resolution
No. of HDMI inputs: 4
No. of Scart inputs: 2 (2 RGB)
No. of component inputs: 1
PC input: 1
Digital tuner: Yes (and CI slot)

Tested: Issue 171
For price check visit:
www.techradar.com/604105



TOSHIBA
42in → 42ZV555D
£900 Approx

1 2 3 4 5

Much-touted Resolution+ LCD gives a polish to SD sources

Highs: HD performance; Resolution+ doesn't disappoint
Lows: Uninspired sound and design; no Res+ over HDMI

→ Specifications

HD Ready: Yes (to 1080p24)
1920 x 1080 resolution
No. of HDMI inputs: 3
No. of Scart inputs: 2 (1 RGB)
No. of component inputs: 1
PC input: 1
Digital tuner: Yes (& analogue & CI slot)

Tested: Issue 165
For price check visit:
www.techradar.com/492878

Editor's Choice...

SAMSUNG
55in → LE55A956D
£2,800 Approx

1 2 3 4 5

Samsung's monster-sized LED-backlit LCD picked up a Home Cinema Choice Best Buy award in #168, because in many ways it helped push liquid crystal to the forefront of TV tech. Our Labs measured its contrast ratio at over 200,000:1 with its Smart LED mode on; couple this with smooth 100Hz processing, class-leading connectivity and cutting-edge media streaming and you've got a flagship telly to fall in love with.

Tested: Issue 163
For price check visit: www.techradar.com/476857



→ Specifications

HD Ready: YES (up to 1080p)
1920 X 1080 resolution
No. of HDMI inputs: 4
No. of Scart inputs: 2 (1 RGB)
No. of component inputs: 1
PC input: 1
Digital tuner: YES (AND CI SLOT)

Plasma TV

Best on test...



PIONEER
60in → KRP-600A
£5,000 Approx



Kuro with separate media box, Ethernet and satellite tuner

Highs: Awesome black levels; colour accuracy; slim panel; medi-savvy

Lows: Problems with AVI files

→ Specifications

HD Ready: Yes (up to 1080p)
1920 x 1080 resolution
No. of HDMI inputs: 4
No. of Scart inputs: 3 (2 RGB)
No. of component inputs: 1
PC input: 1
Digital tuner: Yes (plus CI slot and DVB-S2 tuner)

Tested: Issue 164

For price check visit:

www.techradar.com/487206



PANASONIC
46in → TH-46PZ81
£1,600 Approx



Freesat-ready plasma is an early adopter's dream

Highs: Excellent definition and good contrast; strong audio, Freesat HD functions

Lows: Needs a dish for Freesat

→ Specifications

HD Ready: Yes (up to 1080p)
1920 x 1080 resolution
No. of HDMI inputs: 3
No. of Scart inputs: 2 (2 RGB)
No. of component inputs: 1
PC input: 1 VGA
Digital tuner: Yes (plus Freesat tuner and CI slot)

Tested: Issue 157

For price check visit:

www.techradar.com/363388



PANASONIC
50in → TX-P50V10B
£1,900 Approx



THX-certified, Viera Cast-touting NeoPDP

Highs: THX mode is stunning out of the box; good feature set

Lows: Unspectacular black level response; a bit chunky

→ Specifications

HD Ready: Yes (up to 1080p)
1920 x 1080 resolution
No. of HDMI inputs: 4
No. of Scart inputs: 2 (2 RGB)
No. of component inputs: 1
PC input: Yes
Digital tuner: Yes (plus Freesat tuner and CI slot)

Tested: Issue 171

For price check visit:

www.techradar.com/604030



PIONEER
50in → PDP-LX5090
£2,500 Approx



Baby brother of the LX6090 Kuro panel

Highs: Unbelievable contrast and black levels; superb detail

Lows: Speakers are an optional extra only

→ Specifications

HD Ready: Yes (up to 1080p)
1920 x 1080 resolution
No. of HDMI inputs: 3
No. of Scart inputs: 3 (2 RGB)
No. of component inputs: 1
PC input: 1
Digital tuner: Yes (plus CI slot)

Tested: Issue 159

For price check visit:

www.techradar.com/417409



LG
32in → 32PG6000
£500 Approx



World's smallest 32in plasma challenges LCD rivals

Highs: Smooth movement; good blacks and connectivity

Lows: Lack of detail; some jagged edges; average audio

→ Specifications

HD Ready: Yes
1024 x 720 resolution
No. of HDMI inputs: 4
No. of Scart inputs: 2 (1 RGB)
No. of component inputs: 1
PC input: Yes
Digital tuner: Yes (plus analogue)

Tested: Issue 162

For price check visit:

www.techradar.com/467207

Also Recommended...



LG
50in → 50PG6000
£1,100 Approx



Superb HD Ready plasma offering great value for money

Highs: Extensive calibration possibilities; excellent black level; sexy bezel

Lows: Not Full HD

→ Specifications

HD Ready: Yes
1366 x 768 resolution
No. of HDMI inputs: 4
No. of Scart inputs: 2 (1 RGB)
No. of component inputs: 1
PC input: 1
Digital tuner: Yes (plus CI slot)

Tested: Issue 154

For price check visit:

www.techradar.com/241069



PANASONIC
37in → TH-37PX80
£650 Approx



Small PDP from Panasonic continues the Viera vibe

Highs: Beautiful blacks; natural colours; good GUI

Lows: HDMI v1.2 inputs lack DeepColor support

→ Specifications

HD Ready: Yes
1024 x 720 resolution
No. of HDMI inputs: 3 (v1.2)
No. of Scart inputs: 2 (1 RGB)
No. of component inputs: 1
PC input: Yes
Digital tuner: Yes

Tested: Issue 162

For price check visit:

www.techradar.com/322863



SAMSUNG
50in → PS50A556
£1,000 Approx



Bargain-priced monster screen with a few caveats

Highs: Superb specification; great build quality; sharp detail

Lows: Some motion artefacts and noise visible

→ Specifications

HD Ready: Yes (up to 1080p)
1920 x 1080 resolution
No. of HDMI inputs: 3
No. of Scart inputs: 2 (1 RGB)
No. of component inputs: 1
PC input: Yes
Digital tuner: Yes (plus CI slot)

Tested: Issue 161

For price check visit:

www.techradar.com/463634

Editor's Choice...

PANASONIC
46in → TX-P46Z1
£4,300 Approx



THX certification, full 1080p wireless transmission, ultra-thin design...

Panasonic's flagship plasma TV is a giant leap forward for the display technology. Add in the Freesat HD tuner, Viera Cast and DLNA networkability and stunning HD and SD pictures and you begin to understand the premium price tag. Some might argue that its black levels aren't as jaw-dropping as a Pioneer Kuro – but those screens aren't being made any more. The Z1 is simply the best plasma TV you can buy.

Tested: Issue 172

For price check visit: www.techradar.com/613213

→ Specifications

HD Ready: yes (up to 1080p/24)
Native resolution: 1920 x 1080
No. of HDMI inputs: 4 (v1.3)
No. of Scart inputs: 2 (RGB)
No. of component inputs: 1
PC input: Yes
Digital tuner: Yes (and Freesat)



Blu-ray Players

Best on test...



PIONEER
Blu-ray → BDP-LX91
£1,800 Approx

1 2 3 4 5

Reference status BD deck is also a first-rate CD and DVD player

Highs: Stunning picture; great sound; packed with features and well-designed

Lows: Precision Quartz Lock System works with CDs only

→ Specifications

Blu-ray profile: 2.0
DVD upscaling: Up to 1080p
Analogue audio output: Yes (7.1)
Onboard Dolby TrueHD/DTS-HD MA decoding: Yes/Yes
Dolby TrueHD/DTS-HD MA bitstream output: Yes/Yes
DVD-A/SACD playback: No
Networkability: Yes, via Ethernet

Tested: Issue 167
For price check visit:
www.techradar.com/532605



SONY
Blu-ray → BDP-S350
£250 Approx

1 2 3 4 5

'BD-Live Ready deck' still not quite the finished article

Highs: Good picture quality; decent sound; efficient DVD upscaling

Lows: Needs to be updated to BD-Live; DTS via bitstream only

→ Specifications

Blu-ray profile: 1.1 (2.0 via upgrade)
DVD upscaling: Up to 1080p
Analogue audio output: Yes (stereo only)
Onboard Dolby TrueHD/DTS-HD MA decoding: Yes/No
Dolby TrueHD/DTS-HD MA bitstream output: Yes/Yes
DVD-A/SACD playback: No
Networkability: Yes, via Ethernet, USB

Tested: Issue 161
For price check visit:
www.techradar.com/460426



LG
Blu-ray → BD370
£200 Approx

1 2 3 4 5

Stylish deck with MKV talents and web features

Highs: Excellent Blu-ray performance; MKV playback is an unexpected bonus

Lows: Average DVD upscaling; no multichannel phono outs

→ Specifications

Blu-ray profile: 2.0
DVD upscaling: Up to 1080p
Analogue audio output: Yes (stereo only)
Onboard Dolby TrueHD/DTS-HD MA decoding: Yes/Yes
Dolby TrueHD/DTS-HD MA bitstream output: Yes/Yes
DVD-A/SACD playback: No
Networkability: Yes, via Ethernet (including YouTube access), USB

Tested: Issue 170
For price check visit:
www.techradar.com/596930



PANASONIC
Blu-ray → DMP-BD80
£350 Approx

1 2 3 4 5

Flagship 2009 deck adds YouTube fun to top-class specs

Highs: Full multichannel outputs; superb, detailed images; net functionality

Lows: Uninspired design; sluggish loading times

→ Specifications

Blu-ray profile: 2.0
DVD upscaling: Up to 1080p
Analogue audio output: Yes (7.1)
Onboard Dolby TrueHD/DTS-HD MA decoding: Yes/Yes
Dolby TrueHD/DTS-HD MA bitstream output: Yes/Yes
DVD-A/SACD playback: No
Networkability: Ethernet, VieraCast, SD card slot, USB 2.0

Tested: Issue 169
For price check visit:
www.techradar.com/592252



SONY
Blu-ray → PlayStation3
£300 Approx

1 2 3 4 5

This Blu-ray games console is the world's most popular player

Highs: Profile 2.0 via firmware update; HD gaming, fast Java

Lows: Awkward form factor; Blu-ray remote control costs extra £18

→ Specifications

Blu-ray profile: 2.0
DVD upscaling: Up to 1080p
Analogue audio output: Yes
Onboard Dolby TrueHD/DTS-HD MA decoding: Yes/Yes
Dolby TrueHD/DTS-HD MA bitstream output: Yes/No
DVD-A/SACD playback: No/Yes* (*60GB version only)
Networkability: 6 USB, Ethernet, Memory stick, SD, wi-fi, Bluetooth

Tested: Issue 138
For price check visit:
www.techradar.com/375076

Editor's Choice...

SONY
Blu-ray → BDP-S5000ES → £1,200 Approx

1 2 3 4 5



Sony has finally released a standalone Blu-ray deck that's comfortably better than its PlayStation 3 console. This £1,200 entry into the brand's Elevated Standard component range is a cinephile-grade machine with full Profile 2.0 support, internal decoding and bitstreaming of DTS-HD and Dolby TrueHD and best-in-class build quality. Pictures are immensely satisfying and its aural performance is exquisite. Well worth an audition if you're serious about BD.

Tested: Issue 166
For price check visit: www.techradar.com/503019

→ Specifications

Blu-ray profile: 2.0
DVD upscaling: Up to 1080p
Analogue audio output: Yes (7.1)
Onboard Dolby TrueHD/DTS-HD MA decoding: Yes/Yes
Dolby TrueHD/DTS-HD MA bitstream output: Yes/Yes
DVD-A/SACD playback: No/No
Networkability: MicroVault card slot; LAN port

Also Recommended



SAMSUNG
Blu-ray → BD-P4600
£260 Approx

1 2 3 4 5

Wall-mountable deck with wi-fi dongle option

Highs: Original styling; slim proportions; fast disc-loading; good multimedia management

Lows: Average DVD scaling; limited connectivity

→ Specifications

Blu-ray profile: 2.0
DVD upscaling: Up to 1080p
Analogue audio output: No
Onboard Dolby TrueHD/DTS-HD MA decoding: Yes/Yes
Dolby TrueHD/DTS-HD MA bitstream output: Yes/Yes
DVD-A/SACD playback: No
Networkability: Ethernet (wi-fi dongle is optional for an extra £50) USB

Tested: Issue 169
For price check visit:
www.techradar.com/592233



YAMAHA
Blu-ray → BD-S2900
£700 Approx

1 2 3 4 5

High-end BD debut from Yamaha lacks HD decoding

Highs: BD picture; build quality; CD performance; fast loading

Lows: DVD playback only average; noisy; not Profile 2.0

→ Specifications

Blu-ray profile: 1.1
DVD upscaling: Up to 1080p
Analogue audio output: Yes (5.1)
Onboard Dolby TrueHD/DTS-HD MA decoding: No/No
Dolby TrueHD/DTS-HD MA bitstream output: Yes/Yes
DVD-A/SACD playback: No
Networkability: SD card slot

Tested: Issue 162
For price check visit:
www.techradar.com/467581



PIONEER
Blu-ray → LX-01BD
£2,000 Approx

1 2 3 4 5

Designer all-in-one system with unique 12-sided omnidirectional 41. speaker system

Highs: Credible picture and surround sound; iconic styling
Lows: Speaker position takes work; no networking

→ Specifications

Blu-ray profile: 1.1
DVD upscaling: Up to 1080p
Analogue audio output: Yes (but stereo only)
Onboard Dolby TrueHD/DTS-HD MA decoding: Yes/Yes
Dolby TrueHD/DTS-HD MA bitstream output: NA/NA
DVD-A/SACD playback: No
Networkability: No

Tested: Issue 169
For price check visit:
www.techradar.com/592213

DVD Players

Best on test...



OPPO
DVD → DV-981HD
£180 Approx

1 2 3 4 5

Excellent multiformat player with serious upscaling chipper

Highs: Excellent video processing; DVD-A and SACD playback; multiregion

Lows: Average pics from DivX files; online purchase only

→ Specifications

Upscaling: Up to 1080p
Multiregion: Yes
DVD A/SACD: Both
HDMI out: 1 (plus free cable)
Component: No
RGB Scart: 1
Onboard decoding: Dolby Digital, DTS
Other formats: CD, MP3, WMA, JPEG, MPEG-4, CD-R, CD-RW, DivX, DVD+R/-R, DVD+RW, DVD-RW

Tested: Issue 154
For price check visit:
www.techradar.com/240790



YAMAHA
DVD → DVD-2700
£400 Approx

1 2 3 4 5

Universal high-end player with excellent audio and picture

Highs: Superb upscaling; build quality; RS232 connectivity; audio mode for CDs

Lows: Setup could be more intuitive v1.1 only

→ Specifications

Upscaling: Up to 1080p
Multiregion: No
DVD A/SACD: Both
HDMI out: 1
Component: 1
RGB Scart: 1
Onboard decoding: Dolby Digital, DTS
Other formats: CD, MP3, WMA, JPEG, MPEG-4, CD-R, CD-RW, DivX, DVD+R, DVD-R, DVD+RW, DVD-RW

Tested: Issue 145
For price check visit:
www.techradar.com/278861



PIONEER
DVD → DV-LX50
£400 Approx

1 2 3 4 5

DVD component of Pioneer's LX range is a star performer

Highs: Fabulous build and styling; quality upscaled picture and audio performance

Lows: Complex onscreen display

→ Specifications

Upscaling: Up to 1080p
Multiregion: No
DVD A/SACD: Both
HDMI out: 1
Component: 1
RGB Scart: 1
Onboard decoding: Dolby Digital, DTS
Other formats: CD, MP3, WMA, JPEG, MPEG-4, CD-R, CD-RW, DivX, XviD, DVD+R/-R, DVD+RW, DVD-RW

Tested: Issue 156
For price check visit:
www.techradar.com/248240



DENON
DVD → DVD-1940
£250 Approx

1 2 3 4 5

Yet another quality upscaling deck from Denon

Highs: 1080p upscaling is tidy; SD performance is good too; wide format compatibility

Lows: Bland styling; stereo performance could be better

→ Specifications

Upscaling: Up to 1080p
Multiregion: No
DVD A/SACD: Both
HDMI out: 1
Component: 1
RGB Scart: 1
Onboard decoding: Dolby Digital, DTS
Other formats: CD, MP3, WMA, JPEG, MPEG-4, CD-R, CD-RW, DivX, DVD+R/-R, DVD+RW, DVD-RW

Tested: Issue 156
For price check visit:
www.techradar.com/365528



CAMBRIDGE AUDIO
DVD → Azur 540D
£600 Approx (with amp)

1 2 3 4 5

Superb DVD partner for the brand's Azur amp range

Highs: Sturdy build quality married with smooth, colourful upscaled pictures

Lows: No hi-res audio playback or 1080p upscaling

→ Specifications

Upscaling: UP to 1080i
Multiregion: No
DVD A/SACD: No
HDMI out: 1
Component: 1
RGB Scart: 1
Onboard decoding: Dolby Digital, DTS
Other formats: CD, WMA, JPEG, MPEG-4, CD-R, CD-RW, DivX, DVD+R/-R, DVD+RW, DVD-RW

Tested: Issue 147
For price check visit:
www.techradar.com/126088

Also Recommended...



ONKYO
DVD → DV-SP406
£100 Approx

1 2 3 4 5

Quality upscaling at an affordable price

Highs: Picture quality mainly; front-mounted USB jack for multimedia playback

Lows: Bland looks and unimpressive build quality

→ Specifications

Upscaling: Up to 1080i
Multiregion: No
DVD A/SACD: No
HDMI out: 1
Component: 1
RGB Scart: 1
Onboard decoding: Dolby Digital, DTS
Other formats: CD, MP3, WMA, JPEG, MPEG-4, CD-R, CD-RW, DivX, DVD+R/-R, DVD+RW, DVD-RW

Tested: Issue 168
For price check visit:
www.techradar.com/586445



ARCAM
DVD → DV-135
£900 Approx

1 2 3 4 5

Universal deck that takes DVD as far as it can go. Nearly

Highs: 720p upscaling and CD performance

Lows: No multichannel output for SACD/DVD-A, no 1080p output mode

→ Specifications

Upscaling: Up to 1080i
Multiregion: No
DVD A/SACD: Both, stereo only
HDMI out: 1
Component: 1
RGB Scart: 1
Onboard decoding: Dolby Digital, DTS
Other formats: CD, MP3, WMA, JPEG, CD-R, CD-RW, DivX, HDCD, DVD+R/-R, DVD-RW, and DVD+RW

Tested: Issue 149
For price check visit:
www.techradar.com/283946



LG
DVD → DVS450H
£100 Approx

1 2 3 4 5

Stylish wall-mountable deck with USB and DivX HD support

Highs: Solid DVD playback; eye-catching design; DivX HD performance is startling

Lows: Can't be rack-mounted; not DTS decoding

→ Specifications

Upscaling: Up to 1080p
Multiregion: No
DVD A/SACD: No
HDMI out: 1
Component: 1
RGB Scart: No
Onboard decoding: Dolby Digital
Other formats: CD, MP3, JPEG, MPEG-4, MPEG-4 HD, CD-R, CD-RW, DivX, DivX HD, DVD+R/-R, DVD+/-RW

Tested: Issue 167
For price check visit:
www.techradar.com/492983

Editor's Choice...

TOSHIBA
DVD → XDE-500 → £130 Approx

1 2 3 4 5

Having crashed and burned with HD DVD, Toshiba is fighting back with this revolutionary upscaling DVD player. Powered by the brand's new, super-powered eXtended Detail Enhancement (XDE) technology, it breathes new life into standard DVDs – of which most of us have many. Build quality is a little lacking (reflecting the bargain price) but otherwise this is an easy product to recommend – it's like Viagra for DVDs!

Tested: Issue 161
For price check visit: www.techradar.com/460536



→ Specifications

Upscaling: Up to 1080p
Multiregion: No, but hackable
DVD A/SACD: Nope
HDMI out: 1
Component: 1 (480/576 only)
RGB Scart: 1
Onboard decoding: Dolby Digital, DTS
Other formats: DVD-R/DVD-RW/CD/CD-R/CD-RW/CD, MP3, JPEG, DivX, XviD

DVD Recorders

Best on test...



SONY
DVDR → RDR-HXD995
£250 Approx

1 2 3 4 5

Heavyweight Freeview+ unit with features galore

Highs: Excellent AV performance; flexible recording modes; multimedia prowess

Lows: Records 'interactive red dot'; possible aerial sensitivity

→ Specifications

Hard disk: 250GB
Upscaling: 1080p
HDMI: 1
Component video: Yes (progressive)
RGB Scart in: Yes
Camcorder input: Yes
Tuner: Yes. Digital & Analogue
Format: -R/RW, +R/RW
Dual layer recording: Yes

Tested: Issue 165
For price check visit:
www.techradar.com/494543



PANASONIC
DVDR → MR-EX79
£300 Approx

1 2 3 4 5

2009 DVD/HDD recorder improves slightly on the EX78

Highs: AV performance is first-rate; heaps of features and recording flexibility

Lows: No STB control; can't copy DivX/JPEG to HDD

→ Specifications

Hard disk: 250GB
Upscaling: 1080p
HDMI: 1
Component video: Yes (progressive)
RGB Scart in: Yes
Camcorder input: Yes
Tuner: Yes. Digital & Analogue
Format: -R/RW, +R/RW, -RAM
Dual layer recording: Yes

Tested: Issue 169
For price check visit:
www.techradar.com/592255



PIONEER
DVDR → DVR-560HX
£400 Approx

1 2 3 4 5

Full PC-linked multimedia jukebox and DVD/HDD unit

Highs: Excellent AV performance and features spread; networkability

Lows: Jukebox abilities reliant on Windows Media Player

→ Specifications

Hard disk: 160GB
Upscaling: 1080p
HDMI: 1
Component video: Yes (progressive)
RGB Scart in: Yes
Camcorder input: Yes
Tuner: Yes. Digital & analogue
Format: -R/RW, +R/RW, -RAM
Dual layer recording: Yes

Tested: Issue 159
For price check visit:
www.techradar.com/417978



LG
DVDR/3.1 → HRT403DA
£500 Approx

1 2 3 4 5

Convergence king offers 3.1 audio and HDD/DVD recording

Highs: Acceptable, punchy audio; well-specified recorder; quality DVD pictures

Lows: Lacks DTS support; no 5.1 upgrade path

→ Specifications

Hard disk: 160GB
Upscaling: 1080p
HDMI: 1
Component video: Yes (progressive)
RGB Scart in: Yes
Camcorder input: Yes
Tuner: Yes. Digital & Analogue
Format: -R/RW, +R/RW, -RAM
Dual layer recording: Yes

Tested: Issue 165
For price check visit:
www.techradar.com/490848



PANASONIC
DVD/BDR → DMR-BS850
£1,000 Approx

1 2 3 4 5

Blu-ray/DVD/Freesat/HDD recorder is a convergence king

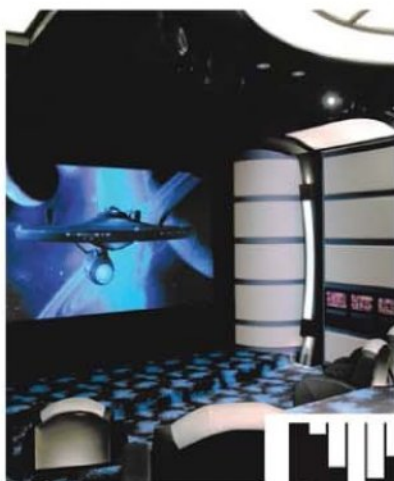
Highs: Amazingly versatile; superb BD record quality; twin Freesat tuners; Viera Cast

Lows: AVCHD dubs to DVD in SD; premium price tag

→ Specifications

Hard disk: 500GB
Upscaling: 1080p
HDMI: 1
Component video: Yes (progressive)
RGB Scart in: Yes
Camcorder input: Yes
Tuner: Yes. 2 x Freesat HD
Format: BD-RE, BD-R, DVD-R/RW, +R/RW, -RAM
Dual-layer recording: Yes

Tested: Issue 170
For price check visit:
www.techradar.com/599118

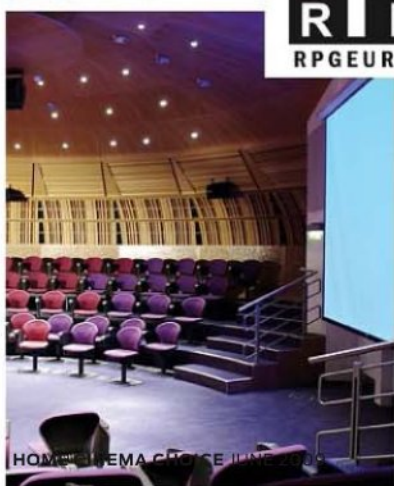


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PVRs

Best on test...



GOODMANS
PVR → GHD2521F2
£130 Approx



Budget-priced twin-tuner Freeview+ PVR with 250GB of hard disk storage

Highs: Superb GUI; competent AV performance and large HDD

Lows: No upgrade path for pay-TV. Some editing glitches

→ Specifications

HDD size: 250GB
Twin tuners: Yes
Component output: No
RGB Scart: Yes
CI-slot: No
Digital tuner: Freeview
Freeview+: Yes

Tested: Issue 159
For price check visit:
www.techradar.com/418531



HUMAX
PVR → PVR-9300T
£200 Approx



Souped-up Humax drops USB socket but boosts HDD capacity

Highs: Easy and responsive to use; fine AV performance; well-featured

Lows: Limited HDMI modes; no USB functionality

→ Specifications

HDD size: 320GB
Twin tuners: Yes
Component output: Yes
RGB Scart: Yes
CI-slot: Yes
Digital tuner: Freeview
Freeview+: Yes

Tested: Issue 162
For price check visit:
www.techradar.com/460642



SAGEM
PVR → DTR 64160T
£100 Approx



160GB Freeview+ PVR with nifty USB powers

Highs: Transport stream recordings are high quality; archiving to USB stick or external drive

Lows: Won't record radio

→ Specifications

HDD size: 160GB
Twin tuners: Yes
Component output: Yes
RGB Scart: Yes
CI-slot: No
Digital tuner: Freeview
Freeview+: Yes

Tested: Issue 166
For price check visit:
www.techradar.com/503202



HUMAX
Freesat PVR → Foxsat HDR
£300 Approx



First Freesat HD PVR brings extra clout to fledgling system

Highs: Cinch to operate; good performance; ITV in HD; JPEG/MP3 playback

Lows: Annoying LCD; slow to boot up; needs more HD content!

→ Specifications

HDD size: 320GB
Twin tuners: Yes
Component output: No
RGB Scart: Yes
CI-slot: Yes
Tuner: Freesat HD (satellite – requires dish)
Freeview+: No

Tested: Issue 165
For price check visit:
www.techradar.com/489319



TOPFIELD
PVR → TF5810PVR
£350 Approx



Freeview+ PVR with enormous 500GB HDD

Highs: Easy to use; PC connectivity; upscales Freeview; twin tuners offer great flexibility

Lows: Competing with high-end DVD recorders

→ Specifications

HDD size: 500GB
Twin tuners: Yes
Component output: No
RGB Scart: Yes
CI-slot: Yes
Digital tuner: Freeview
Freeview+: Yes

Tested: Issue 156
For price check visit:
www.techradar.com/262044

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AV Receivers

Best on test...



ARCAM
AVR → AVR600
£3,500 Approx

1 2 3 4 5

Long-awaited HD AVR from classy Brit brand dazzles with movies and music

Highs: Sophisticated, flexible and polished sound; gorgeous design
Lows: Lacks a bit of grunt

→ Specifications

Power output: 7 x 120W
Upscaling via HDMI: Yes
Tuner: Yes (DAB/AM/FM)
Dolby TrueHD: Yes
DTS-HD: Yes
Zone 2: Yes, and 3
Serial port control: Yes, 2
THX certification: No
Component input: 5
HDMI: 5-in, 2-out (v1.3)
Multichannel input: Yes (7.1)

Tested: Issue 172
For price check visit:
www.techradar.com/613252



SONY
AVR → STR-DA5400ES
£1,500 Approx

1 2 3 4 5

Class-leading mid-priced AVR with power and poise

Highs: Excellent build; audiophile SACD and CD playback; full of power
Lows: No Ethernet port, THX certification or DAB radio

→ Specifications

Power output: 7 x 130W
Upscaling via HDMI: Yes
Tuner: Yes (AM/FM)
Dolby TrueHD: Yes
DTS-HD: Yes
Zone 2: Yes
Serial port control: No
THX certification: No
Component input: 2
HDMI: 5-in, 1-out (v1.3)
Multichannel input: Yes (7.1)

Tested: Issue 166
For price check visit:
www.techradar.com/503066



ONKYO
AVR → TX-SR607
£500 Approx

1 2 3 4 5

Mid-range HD receiver with Dolby 'Height' processing

Highs: Excellent OSD; lengthy feature set; twin subwoofer outputs
Lows: Dolby Pro Logic IIz is a bit of a gimmick

→ Specifications

Power output: 7 x 145W
Upscaling via HDMI: Yes
Tuner: Yes
Dolby TrueHD: Yes
DTS-HD: Yes
Zone 2: Yes
Serial port control: Yes
THX certification: Select2 Plus
Component input: 2
HDMI: 4-in, 1-out (v1.3)
Multichannel input: No

Tested: Issue 170
For price check visit:
www.techradar.com/596948



HARMAN KARDON
AVR → AVR 255
£600 Approx

1 2 3 4 5

Affordable HK unit with HD audio and 1080p chops

Highs: Great looks; power rates better than quoted specs
Lows: A little warm-sounding; no backlight on remote

→ Specifications

Power output: 7 x 50W
Upscaling via HDMI: Yes
Tuner: Yes
Dolby TrueHD: Yes
DTS-HD: Yes
Zone 2: Yes
Serial port control: Yes
THX certification: No
Component input: 2
HDMI: 3-in, 1-out (v1.3)
Multichannel input: Yes (7.1)

Tested: Issue 165
For price check visit:
www.techradar.com/495341



DENON
AVR → AVR-2309
£600 Approx

1 2 3 4 5

Mid-range HD audio unit lacks networking but sounds superb

Highs: Fabulous balance with HD audio; punchy sound with CDs; powerful
Lows: No networking and only 1 HDMI output

→ Specifications

Power output: 7 x 100W
Upscaling via HDMI: Yes
Tuner: Yes
Dolby TrueHD: Yes
DTS-HD: Yes
Zone 2: Yes
Serial port control: Yes
THX certification: No
Component input: 3
HDMI: 4-in, 1-out (v1.3)
Multichannel input: Yes (7.1)

Tested: Issue 162
For price check visit:
www.techradar.com/466939

Editor's Choice...

PIONEER
AVR → SC-LX81
£1,500 Approx

1 2 3 4 5

Derived from the brand's flagship Susano amp, but ultimately a more practical and affordable option, the £1,500 THX-certified and AIR Studios-graded Pioneer SC-LX81 receiver is built like a tank, styled like a supermodel and crammed with genius features (ICEpower technology, 9-band Advanced MCACC system, LAN interface and Advanced Sound Retriever to name a few). It sounds stunning, too, and our Tech Labs rated its power performance as excellent in all regards.

Tested: Issue 167
For price check visit: www.techradar.com/532595

→ Specifications

Power output: 7 x 190W
Upscaling to HDMI: Yes
Tuner: Yes
Dolby TrueHD/DTS-HD: Yes/Yes
Zone 2: Yes and Zone 3
Serial port control: Yes
THX certification: Yes – THX Ultra2 Plus
Component input: 3
HDMI: 4-in, 2-out (v1.3)
Multichannel input: Yes (7.1)



Also Recommended...



YAMAHA
AVR → RX-V3900
£1,500 Approx

1 2 3 4 5

7.1-channel mid-ranger lacks video networking and THX badge, but sounds fantastic

Highs: Dynamic, exciting sound; well-connected
Lows: Networked media player audio-only

→ Specifications

Power output: 7 x 140W
Upscaling via HDMI: Yes
Tuner: Yes
Dolby TrueHD: Yes
DTS-HD: Yes
Zone 2: No
Serial port control: Yes
THX certification: No
Component input: 3
HDMI: 4-in, 2-out (v1.3)
Multichannel input: Yes (7.1)

Tested: Issue 168
For price check visit:
www.techradar.com/579879



ONKYO
AVR → TX-NR906
£1,400 Approx

1 2 3 4 5

THX Ultra2 Plus AVR with ISF tweaker is Onkyo's flagship

Highs: Powerful; superb video processor; full-on up front sound; networkability
Lows: Operational issues; build quality could be better

→ Specifications

Power output: 7 x 200W
Upscaling via HDMI: Yes
Tuner: Yes
Dolby TrueHD: Yes
DTS-HD: Yes
Zone 2: Yes and 3
Serial port control: Yes
THX certification: Ultra2 Plus
Component input: 3
HDMI: 6-in, 2-out (v1.3)
Multichannel input: Yes (7.1)

Tested: Issue 164
For price check visit:
www.techradar.com/476747



YAMAHA
Amp → DSP-Z7
£2,000 Approx

1 2 3 4 5

Trimmed-down version of the award-winning Z11

Highs: Large sound with huge bass and plenty of detail
Lows: Orange display; disconcerting pops when changing sources

→ Specifications

Power output: 7 x 140W
Upscaling via HDMI: Yes
Tuner: No (net only)
Dolby TrueHD: Yes
DTS-HD: Yes
Zone 2: Yes, and 3 & 4
Serial port control: Yes
THX certification: No
Component input: 3
HDMI: 5-in, 2-out (v1.3)
Multichannel input: Yes (5.1)

Tested: Issue 172
For price check visit:
www.techradar.com/612358

Projectors

Best on test...



SIM2
DLP → Grand Cinema
C3X 1080
£23,000 Approx



Reference-status PJ with brilliant colour management

Highs: Gorgeous design; small form factor; dazzling pictures

Lows: SD processing isn't quite hi-end enough for the price

→ Specifications

1920 x 1080 resolution
HDMI inputs: 2
Component inputs: 1
PC compatibility: Yes (D-Sub)
Brightness (claimed): NA
Contrast (claimed): 10,000:1
Lamp life (claimed): 2,000 hours
Fan noise: NA
24fps: Yes

Tested: Issue 169

For price check visit:
www.techradar.com/591731



SONY
SXR D → VPL-VW80
£5,000 Approx



Sony's SXR D technology continues to dazzle

Highs: Pictures are near faultless; features galore; runs quietly; sky high contrast ratio

Lows: Motion Enhancement system needs work

→ Specifications

1920 x 1080 resolution
HDMI inputs: 2
Component inputs: 1
PC compatibility: Yes (D-Sub)
Brightness (claimed): 800 ANSI lumens
Contrast (claimed): 60,000:1
Lamp life (claimed): 3,000 hours
Fan noise: 20dB
24fps: Yes

Tested: Issue 164

For price check visit:
www.techradar.com/487460



JVC
D-ILA → HD350
£3,500 Approx



Fantastically filmic PJ is a steal at £3,500

Highs: Stunning picture quality; runs quietly; easy and flexible to setup

Lows: No direct PC hookup; DLP rivals may be brighter

→ Specifications

1920 x 1080 resolution
HDMI inputs: 2
Component inputs: 1
PC compatibility: Only by HDMI
Brightness (claimed): 1,000 ANSI lumens
Contrast (claimed): 30,000:1
Lamp life (claimed): 2,000 hours
Fan noise: 19dB
24fps: Yes

Tested: Issue 167

For price check visit:
www.techradar.com/532631



INFOCUS
DLP → IN83
£3,900 Approx



UK debut of DLP DarkChip4 technology

Highs: Groundbreaking black levels and colour fidelity at this price point

Lows: Rainbow effect may distract; quite a noisy runner

→ Specifications

1920 x 1080 resolution
HDMI inputs: 2 (1 via M1-DA adaptor)
Component inputs: 1
PC compatibility: via M1-DA
Brightness (claimed): 1600
Contrast (claimed): 15,000:1
Lamp life (claimed): 2,500 hours
Fan noise: 30dB
24fps: Yes

Tested: Issue 161

For price check visit:
www.techradar.com/463009



PANASONIC
LCD → PT-AE3000
£2,200 Approx



Excellent all-rounder packed with user-friendly features

Highs: Good black level, contrast and colours; flexibility; quiet running

Lows: Needs tweaking for best results; no 12V trigger

→ Specifications

1920 x 1080 resolution
HDMI inputs: 3
Component inputs: 2
PC compatibility: Yes (D-Sub)
Brightness (claimed): 1,600 ANSI lumens
Contrast (claimed): 60,000:1
Lamp life (claimed): 2,000 hours
Fan noise: 22dB
24fps: Yes

Tested: Issue 166

For price check visit:
www.techradar.com/503174

Also Recommended...



SONY
SXR D → HW10
£1,500 Approx



Full HD at a great price from this entry-level Bravia

Highs: Superb film-like picture quality; excellent build; virtually no fan noise

Lows: On the large side; moderate lamp brightness

Specifications

1920 x 1080 resolution
HDMI inputs: 2
Component inputs: 1
PC compatibility: Yes (VGA)
Brightness (claimed): 1,000 ANSI lumens
Contrast (claimed): 30,000:1
Lamp life (claimed): 2,000 hours (5,000 eco)
Fan noise: 22dB
24fps: Yes

Tested: Issue 163

For price check visit:
www.techradar.com/460300



SANYO
LCD → PLV-Z3000
£2,000 Approx



Solid HD performer with a few minor niggles

Highs: Flexible lens settings; quiet operation; tasty price
Lows: Lacks basic niceties like a 12V trigger and remote focus; black levels aren't best in class

→ Specifications

1920 x 1080 resolution
HDMI inputs: 2
Component inputs: 2
PC compatibility: Yes (D-Sub)
Brightness (claimed): 1,600 ANSI lumens
Contrast (claimed): 65,000:1
Lamp life (claimed): N/A
Fan noise: 19dB
24fps: Yes

Tested: Issue 167

For price check visit:
www.techradar.com/532622



PLANAR
DLP → PD8150
£4,400 Approx



Premium custom install DLP projector with great contrast

Highs: Excellent picture quality; ISF calibration mode
Lows: No electronic keystone correction; traces of rainbow effect

→ Specifications

1920 x 1080 resolution
HDMI inputs: 2
Component inputs: 1
PC compatibility: Only by HDMI
Brightness (claimed): 1,000 ANSI lumens
Contrast (claimed): 15,000:1
Lamp life (claimed): 4,000 hours
Fan noise: NA
24fps: Yes

Tested: Issue 158

For price check visit:
www.techradar.com/383239

Editor's Choice...

EPSON
LCD → EH-TW3800
£2,000 Approx



Ideal for movies, sports, TV and gaming, Epson's high-value EH-TW3800 is a flawless example of cutting-edge 1080p LCD projection technology. Priced at £2,000, it offers a superb picture and boasts easy setup, high dynamic contrast ratio, great connectivity (including twin HDMI) and ISF calibration. It's deadly quiet in operation, and looks classy, too. Proof, if it were needed, that Epson knows a thing or two about making high-quality HD projectors. Those with bigger wallets might want to check out the step-up EH-TW5800 as well.

Tested: Issue 167

For price check visit: www.techradar.com/527031

→ Specifications

1920 x 1080 resolution
HDMI inputs: 2
Component inputs: 1
PC compatibility: VGA
Brightness (claimed): 1,800 ANSI lumens
Contrast (claimed): 18,000:1
Lamp life (claimed): 4,000 hours
Fan noise: 22dB
24fps: Yes

Subwoofers

Best on test...



BK
SW → XLS200
£290 Approx

1 2 3 4 5

10in driver married to high- and line-level inputs

Highs: Deep and extended output; disproportionately powerful; compact

Lows: Bland styling

→ Specifications

Frequency response: 22Hz-100Hz (claimed)
Amplifier: 275W
Driver: 10in
Weight: 12.7kg
Enclosure: Sealed
On-board equaliser: No
Remote control: No

Tested: Issue 151
For price check visit:
www.techradar.com/249083



MARTINLOGAN
SW → Descent i
£3,250 Approx

1 2 3 4 5

Weapons-grade unit with 3 x 10in woofers

Highs: Superb engineering; Reference standard performance

Lows: Bulky and premium-priced; no automated setup

→ Specifications

Frequency response: 18Hz-120Hz (claimed)
Amplifier: 500W
Driver: 3 x 10in
Weight: 47.7kg
Enclosure: Sealed
On-board equaliser: No
Remote control: No

Tested: Issue 167
For price check visit:
www.techradar.com/532655



BOWERS & WILKINS
SW → ASW608
£300 Approx

1 2 3 4 5

Compact subwoofer ideal for smaller rooms

Highs: Excellent grip and musical low-end control

Lows: Limited by its size

→ Specifications

Frequency response: 23Hz-140Hz (claimed)
Amplifier: 200W
Driver: 8in
Weight: 8.85kg
Enclosure: Sealed
On-board equaliser: Yes
Remote control: No

Tested: Issue 160
For price check visit:
www.techradar.com/423217



VELODYNE
SW → DD-10
£1,900 Approx

1 2 3 4 5

We love the see-thru version of this excellent bass shifter

Highs: Thrilling performance, special edition finishes

Lows: You can get more muscle for the money

→ Specifications

Frequency response: 18-120Hz (claimed)
Amplifier: 1,250W
Driver: 10in
Weight: 26kg
Enclosure: Sealed
On-board equaliser: Yes
Remote control: Yes

Tested: Issue 158
For price check visit:
www.techradar.com/381347



VELODYNE
SW → SPL-1200 Ultra
From £1,400 Approx

1 2 3 4 5

Potent sub – now with custom finish options

Highs: Tight, powerful bass; useful auto-calibration

Lows: Few added benefits over the step-down model

→ Specifications

Frequency response: 21-120Hz (claimed)
Amplifier: 1,200W
Driver: 12in
Weight: 22kg
Enclosure: Sealed
On-board equaliser: Yes
Remote control: Yes

Tested: Issue 172
For price check visit:
www.techradar.com/613234

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Speaker Systems

Best on test...



ACOUSTIC ENERGY
7.2 → Aegis Neo
£1,850 Approx

1 2 3 4 5

Excellent 7.2 speaker array at a bargain price

Highs: Excellent build quality; genuine synergy across the soundstage and effortless might
Lows: For dedicated home cinema rooms only; music comes second best

→ Specifications

Power handling: 6 x 170, 1 x 120W
Rears: Direct radiating
Subwoofer: 2 x 200W
Finish: Wood; Bookshelf: No

Tested: Issue 161

For price check visit:

www.techradar.com/464451



PIONEER
5.1 → EX Series
£11,000 Approx

1 2 3 4 5

A stunning 5.1 system to match the brand's high-quality components

Highs: Breathtaking accuracy; beautiful imagery and detail; sexy design and solid build
Lows: Demands specific room placement

→ Specifications

Power handling: 5 x 160W, Rears: Direct radiating
Subwoofer: 250W
Finish: Gloss; Bookshelf: Rears (at a stretch...)

Tested: Issue 170

For price check visit:

www.techradar.com/597086



CABASSE
5.1 → EOLE 2
£1,200 Approx

1 2 3 4 5

Quirky-looking 5.1 sub/sat system

Highs: Design and build; flexible mounting; warm, involving voice
Lows: Slightly rough high frequencies; power handling disappoints; limited bass

→ Specifications

Power handling: 5 x 70W, 4 x 100W
Rears: Direct radiating
Subwoofer: 250W
Finish: Gloss; Bookshelf: Yes

Tested: Issue 169

For price check visit:

www.techradar.com/591911



TEUFEL
5.1 → System 9
€4,400 Approx

1 2 3 4 5

Potent THX Ultra2-system with industrial styling and build

Highs: Great bass extension; huge scale and accuracy; pleasing to look at, too
Lows: Stands or wall bracket fittings are extra; subwoofer is huuuuuge!

→ Specifications

Power handling: 3 x 240W, 1 x 180W
Rears: Dipole
Subwoofer: 700W
Finish: Alu; Bookshelf: No

Tested: Issue 166

For price check visit:

www.techradar.com/502870



MISSION
5.1 → 79 Series
£2,400 Approx

1 2 3 4 5

Floor-standing system with innovative side-firing bass drivers

Highs: Sophisticated and clean-sounding; excellent stereo imagery; easy on the eye
Lows: Not the most powerful or deepest bass in its class; won't go super-loud

→ Specifications

Power handling: 5 x 200W
Rears: Direct radiating
Subwoofer: 300W
Finish: Gloss; Bookshelf: Rears only

Tested: Issue 171

For price check visit:

www.techradar.com/605119

Also Recommended...



JAMO
5.1 → A 102 HCS 5
£330 Approx

1 2 3 4 5

Good-value 5.1 system with living-room-friendly size/looks

Highs: Relaxed, intelligible dialogue presentation; available online for as little as £200
Lows: Subwoofer lacks real subterranean power; small satellites lend a rawness to the audio

→ Specifications

Power handling: 5 x 60W
Rears: Direct radiating
Subwoofer: 200W
Finish: Cherry; Bookshelf: No

Tested: Issue 170

For price check visit:

www.techradar.com/597043



KEF
7.1 → Q Series
£2,000 Approx

1 2 3 4 5

Classy-looking 7.1 set with a penchant for music and movies

Highs: Seamless integration from UniQ speakers; crystal clear high-end
Lows: Floorstanders need a lot of breathing space

→ Specifications

Power handling: 4 x 130W, 2 x 100W, 1 x 150
Rears: Direct radiating
Subwoofer: 250 RMS
Finish: Wood; Bookshelf: No

Tested: Issue 166

For price check visit:

www.techradar.com/502987



MJ ACOUSTICS
5.1 → Xeno
£800 Approx

1 2 3 4 5

Stylish 5.1 sub/sat system with remarkable voice

Highs: Compact design; strong centre channel; feisty, versatile subwoofer
Lows: Lacks the scale of dispersion required for larger rooms

→ Specifications

Power handling: 4 x 100W, 1 x 120W
Rears: Direct radiating
Subwoofer: 120W
Finish: Gloss; Bookshelf: Yes

Tested: Issue 161

For price check visit:

www.techradar.com/423010

Editor's Choice...

KEF
7.2 → Reference
£40,000 Approx

1 2 3 4 5

If we were planning a once-in-a-lifetime home cinema, we'd have this £40k KEF system on our list. Everything from the build quality and luxurious black finish to the 7.2 performance is awe-inspiring.

The array is underpinned by twin 1,000W, 18in subwoofers – and even the floorstanding L/R units tout three 10in drivers – but KEF's UniQ tweeter wizardry means high-frequency detail is captured and dispersed in all its glory. The Reference system is subtle, detailed, incredibly intricate and yet able to reproduce explosions with a visceral grip that pressurises your entire world. Musicality and mayhem all at once – and worth every penny.

Tested: Issue 165

For price check visit: www.techradar.com/496220

→ Specifications

Power handling: 3 x 150W, 4 x 100W
Rears: Direct radiating
Subwoofer: 2 x 1,000W (power from separate amp unit)
Finish: Gloss
Bookshelf: No

Essentials

Best on test...



LINKSYS
Media Server
NMH410 → £350 Approx

1 2 3 4 5

The poster boy of the new NAS generation

Highs: Beautifully built and whisper quiet; intelligent syncing with your PC
Lows: No integrated BitTorrent support; won't stream DRM-lashed content

→ Specifications

Drive Bays: 2 SATA (one pre-installed with 1TB HDD)
2 x USB ports
PC backup with NTI Shadow software
DLNA 1.5 certified

Tested: Issue 172
For price check visit:
www.techradar.com/613297



LOGITECH
Remote control
Harmony 1100
£350 Approx

1 2 3 4 5

Upgrade from the 1000 adds new software, GUI and layout

Highs: Massive, and expanding, online database of control codes; macro setup; user-friendly
Lows: RF control is only available as an extra

→ Specifications

3.5in colour touchscreen
Lithium-ion battery
Charging station
USB cable
Quick-start guide
AC adapter

Tested: Issue 168
For price check visit:
www.techradar.com/586508



POPCORN HOUR
NAS media streamer
A-110 → £260 Approx

1 2 3 4 5

A flexible multimedia streamer with an online cult following...

Highs: Quiet in use; insanely versatile; extensive connections; HD streaming works well
Lows: Simple construction; inadequate manual

→ Specifications

256MB DDR SDRAM; 32MB Flash memory
NAS access: SMB, NFS, FTP
Dolby TrueHD and DTS-HD audio passthrough
Extensive file support

Tested: Issue 169
For price check visit:
www.techradar.com/592095



LACIE
HD media centre
La Cinema Black
Max → £390 Approx

1 2 3 4 5

Sleek-looking media server with PVR functionality

Highs: Excellent AV performance; clear and intuitive menus; compatible with a huge range of media
Lows: Quite an expensive way to do what it does

→ Specifications

500GB HDD
1080i upscaling of SD movies
DVB-T tuner
MPEG-1, MPEG-2 / HD, MPEG-4, DIVX, XVID, H.264 HD, WMV9 HD video codec support

Tested: Issue 170
For price check visit:
www.techradar.com/599128



LG
All-in-one-system → HT953TV
£700 Approx

1 2 3 4 5

Mr Mark Levinson-tuned solution with 10.1 virtual surround

Highs: Elegant speaker design; HDMI input for Blu-ray; powerful 5.1 surround sound
Lows: Sounds a little compressed in stereo; cabinets are plastic

→ Specifications

1,000W claimed power output
Dolby 5.1, Pro-LogicII, DTS 5.1, ES decoders
USB Host
HDMI: 1 in, 1 out
1080p upscaling
FM tuner

Tested: Issue 163
For price check visit:
www.techradar.com/476886

Also Recommended...



HAUPPAUGE
PVR → HD PVR
£150 Approx

1 2 3 4 5

Back up your Sky+ HD box via component

Highs: Supplied with comprehensive software suite
Lows: No built-in storage; requires powerful PC

→ Specifications

USB: Yes – use this to hookup to your PC
Component, S-video, stereo and optical digital audio (use the latter for recording Dolby Digital 5.1)

Tested: Issue 165
For price check visit:
www.techradar.com/490892



LOGITECH
Streamer → Squeezebox
Boom → £200 Approx

1 2 3 4 5

Wi-fi enabled music streamer doubles as a clock radio

Highs: Looks and sounds great; 30W onboard amplification
Lows: Software installation required

→ Specifications

0.75in tweeter and 3in long-throw woofer
Stereo XL™ technology
7-day alarm clock
Infrared remote control
Built-in 802.11g wireless
MP3, AAC, WMA, Ogg, FLAC, WMA, WAV, and AIFF support

Tested: Issue 164
For price check visit:
www.techradar.com/487532



SHARKOON
Gaming Headphones
X-tatic → £110 Approx

1 2 3 4 5

Dolby Digital 5.1 cans add another level to gaming

Highs: Creates truly immersive audio and a believable bubble of sound; comfortable to wear
Lows: No wireless option

→ Specifications

8 speakers (4-in each earpiece)
PS3, Xbox and Xbox 360 chat function
Sound control unit: 1 x optical input; 2 x analogue audio; 3 x analogue 3.5 mm audio outputs; DD 2.0, 5.1 and Pro-Logic decoders

Tested: Issue 169
For price check visit:
www.techradar.com/592328

Editor's Choice...

IOmega
NAS storage
StorCenter IX2
£320

1 2 3 4 5

This diminutive 2TB NAS device from Iomega (with painless installation, two-disk RAID array, USB 2.0 ports and Bluetooth connectivity) makes PC backup and network media distribution a doddle. And it looks sexy, too.



Tested: Issue 167
For price check visit:
www.techradar.com/532738

→ Specifications

2 TB capacity
Windows PC, Mac OS and Linux compatible
Two USB 2.0 ports (host, to connect external HDD or printers)
10/100/1000Mbps Ethernet connection

Top Five Blu-rays

Got a Blu-ray player? Then get these titles...

| | |
|--|-----------|
| Children of Men Riveting sci-fi gets the HD release it deserves | 1 2 3 4 5 |
| Slumdog Millionaire Oscar-winner with a brilliant 5.1 DTS-HD mix | 1 2 3 4 5 |
| The Good, the Bad and the Weird Kray-zee Korean western on a cracking BD | 1 2 3 4 5 |
| The Italian Job Classic crime caper spruced up for Blu-ray | 1 2 3 4 5 |
| Akira US import with mindblowing 24/192kHz TrueHD | 1 2 3 4 5 |



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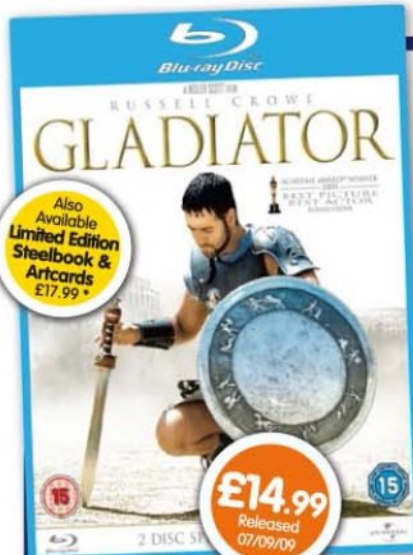
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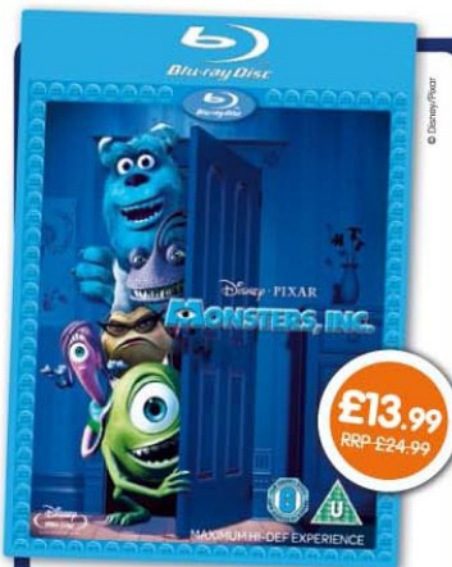
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